

1988-89

# CATALOG

UNIVERSITY OF ALASKA FAIRBANKS



1988-89

# Catalog

## UNIVERSITY OF ALASKA FAIRBANKS



The University of Alaska Fairbanks is a major unit of the University of Alaska Statewide System of higher education. Under the direction of the Board of Regents, the University of Alaska System serves the people of America's largest state through facilities located throughout the state. Information about the programs of each unit in the system may be obtained from that unit.

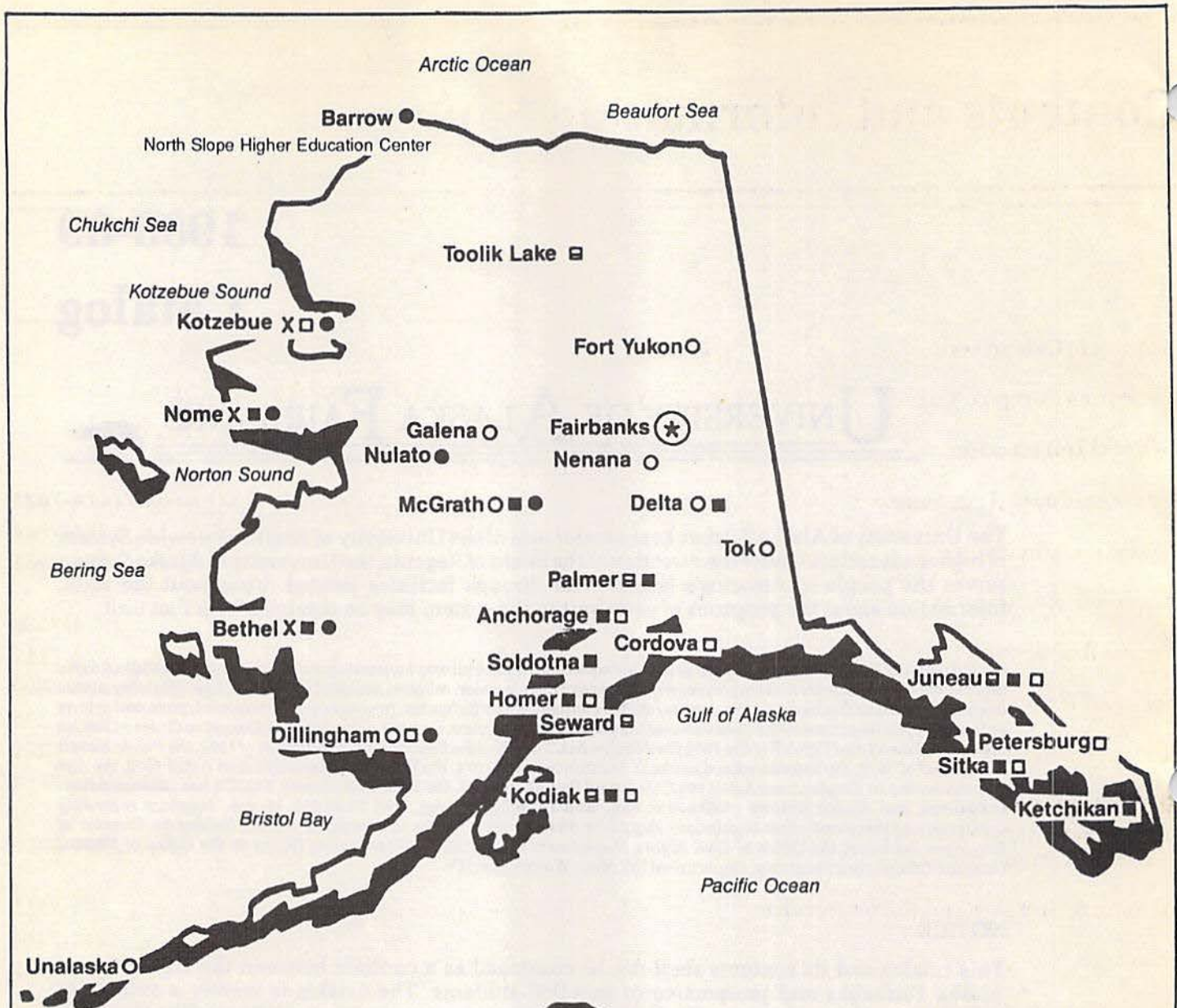
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### NOTICE

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 catalog generally includes course descriptions. However, due to ongoing changes resulting from the university's recent restructuring, the course descriptions are being published in a separate volume. The course descriptions publications is a part of the 1988-89 University of Alaska Fairbanks academic catalog.



**Locations:**

- (\*) University of Alaska Fairbanks main campus
- X Branch campuses
- Rural education centers
- ◻ Research centers
- Cooperative Extension Service
- Marine Advisory Program
- XCED Cross-Cultural Education Development program

**UNIVERSITY OF ALASKA FAIRBANKS**



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## Sources of Information University of Alaska Fairbanks

Admissions and	
Records.....	(907) 474-7521 or (907) 474-7821
Alaska Teacher Placement .....	474-6644
Alumni Association .....	474-7081
Career Planning and	
Placement.....	474-7596
Chancellor .....	474-7112
Conferences and Institutes .....	474-7800
Cooperative Extension Service .....	474-7246
Correspondence Study .....	474-7222
Fairbanks Assembly .....	474-7964
Fees.....	474-7551
Financial Aid.....	474-7256
Foreign Students	
International Student Adviser .....	474-7317
Graduate School.....	474-7464
Honors Program.....	474-6612
Housing .....	474-7247
International Programs.....	474-5327
Mining Extension	
School of Mineral Engineering .....	474-7366
Rural Student Services.....	474-7872
Student Activities .....	474-7037
Student Advising .....	474-7317
Student Affairs .....	474-7317
Summer Sessions .....	474-7021
Telephone Information.....	474-7211
University Relations.....	474-7581
Women's Center.....	474-6330

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

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# Academic Calendars — Fairbanks Campus

## 1988

### 1988 Summer Sessions

June 1-Aug. 21

June						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

July						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

August						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

### 1988 Fall Semester

Early Orientation for

New Students (EONS).....	Sat.-Mon., Sept. 3-5
Registration materials and advisers available .....	Tue., Sept. 6
Registration: course selection.....	Tues.-Wed., Sept. 6-7
Registration: fee payment .....	Thurs.-Tues., Sept. 8-13
First day of instruction .....	Thurs., Sept. 8
Last day of late registration.....	Wed., Sept. 14
Last day to apply for fall graduation .....	Fri., Oct. 14
Mid-term grades for freshmen.....	Oct. 20-Nov. 2
Last day for student-initiated withdrawals.....	Wed., Nov. 9
Thanksgiving holiday .....	Thurs.-Fri., Nov. 24-25
Last day of instruction .....	Fri., Dec. 9
Final examinations .....	Mon.-Thurs., Dec. 12-15
Grades due to Admissions and Records from faculty.....	Noon, Mon., Dec. 19

September						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

October						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

November						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

December						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

### 1989 Spring Semester

Early Orientation for

New Students (EONS).....	Mon.-Tues., Jan. 16-17
Registration materials and advisers available .....	Mon., Jan. 16
Registration: course selection.....	Tues.-Wed., Jan. 17-18
Registration: fee payment .....	Thurs.-Tues., Jan. 19-24
First day of instruction .....	Thurs., Jan. 19
Last day of late registration.....	Wed., Jan. 25
Last day to apply for spring graduation .....	Wed., Feb. 15
Mid-term grades for freshmen.....	Mar. 6-10, 20-24
Spring recess.....	Mar. 13-17
Last day for student-initiated withdrawals.....	Wed., Mar. 29
All Campus Day (no classes).....	Fri., Apr. 21
Last Day of Instruction .....	Fri., Apr. 28
Final examinations .....	Mon.-Thurs., May 1-4
Commencement .....	Sun., May 7
Grades due to Admissions and Records from faculty.....	Noon, Mon., May 8

## 1989

January						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

February						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

March						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

April						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

May						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

# 1989

May						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

June						
S	M	T	W	T	F	S
		1	2	3		
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

July						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

August						
S	M	T	W	T	F	S
						1
						2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

## 1989 Summer Sessions

May 29-Aug. 18

## 1989 Fall Semester

Early Orientation for New Students (EONS) .....	Sat.-Mon., Sept. 2-4
Registration materials and advisers available .....	Tues., Sept. 5
Registration: course selection .....	Tues.-Wed., Sept. 5-6
Registration: fee payment .....	Thurs.-Tues., Sept. 7-12
First day of instruction .....	Thurs., Sept. 7
Last day of late Registration .....	Wed., Sept. 13
Last day to apply for fall graduation .....	Mon., Oct. 16
Mid-term grades for freshmen .....	Oct. 19-Nov. 1
Last day for student-initiated withdrawals .....	Wed., Nov. 8
Thanksgiving holidays .....	Thurs.-Fri., Nov. 23-24
Last day of instruction .....	Fri., Dec. 8
Final examinations .....	Mon.-Thurs., Dec. 11-14
Grades due to Admissions and Records from faculty .....	Noon, Mon., Dec. 18

## 1990 Spring Semester

Early Orientation for New Students (EONS) .....	Mon.-Tues., Jan. 15-16
Registration materials and advisers available .....	Mon., Jan. 15
Registration: course selection .....	Tues.-Wed., Jan. 16-17
Registration: fee payment .....	Thurs.-Tues., Jan. 18-23
First day of instruction .....	Thurs., Jan. 18
Last day of late registration .....	Wed., Jan. 24
Last day to apply for spring graduation .....	Thurs., Feb. 15
Mid-term grades for freshmen .....	Mar. 5-9, 19-23
Spring recess .....	Mar. 12-16
Last day for student-initiated withdrawals .....	Wed., Mar. 28
All Campus Day (no classes) .....	Fri., Apr. 20
Last day of instruction .....	Fri., Apr. 27
Final examinations .....	Mon.-Thurs., Apr. 30-May 3
Commencement .....	Sun., May 6
Grades due to Admissions and Records from faculty .....	Noon, Mon., May 7

(Note: Dates are subject to change.)

# 1990

January						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

February						
S	M	T	W	T	F	S
						1
						2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

March						
S	M	T	W	T	F	S
						1
						2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

April						
S	M	T	W	T	F	S
						1
						2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

May						
S	M	T	W	T	F	S
						1
						2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

# Academic Calendars — Branch Campuses

## 1988-89

### Chukchi Campus

#### 1988 Fall Semester

Early Registration .....	Mon., Aug. 29
Registration.....	Mon., Sept. 5
First Day of Instruction.....	Mon., Sept. 12
Last Day of Late Registration .....	Mon., Sept. 19
Last Day to Apply for Fall Graduation .....	Fri., Oct. 14
Last Day for Student-Initiated Withdrawals .....	Fri., Nov. 11
Thanksgiving Holidays.....	Thurs.-Fri., Nov. 24-25
Last Day of Instruction .....	Fri., Dec. 23
Grade Due to Admissions and Records from Faculty.....	Wed., Dec. 28

#### 1989 Spring Semester

Early Registration .....	Mon., Jan. 9
Registration.....	Mon., Jan. 16
First Day of Instruction.....	Mon., Jan. 23
Last Day of Late Registration .....	Mon., Jan. 30
Last Day to Apply for Spring Graduation .....	Wed., Feb. 15
Spring Recess.....	Mar. 17-20
Last Day for Student-Initiated Withdrawals .....	Fri., Mar. 24
Last Day of Instruction .....	Fri., May 5
Grade Due to Admissions and Records from Faculty.....	Wed., May 10
Commencement .....	Thurs., May 11

### Kuskokwim Campus

#### 1988 Fall Semester

Residence Halls Open.....	Mon., Sept. 5
Three-Week Session Begins.....	Tues., Sept. 6
Last Day of Three-Week Session.....	Fri., Sept. 23
Registration for 12-Week Session.....	Thurs.-Sat., Sept. 22-24
First Day of Instruction for 12-Week Session.....	Mon., Sep. 26
Last Day of Late Registration .....	Mon., Oct. 3
Drop, Audit or Credit/No Credit Option Deadline .....	Fri., Oct. 7
Last Day to Apply for Fall Graduation .....	Fri., Oct. 14
Last Day for Student-Initiated Withdrawals .....	Fri., Nov. 11
Thanksgiving Holidays.....	Thurs.-Fri., Nov. 24-25
Last Day of Instruction .....	Fri., Dec. 16
Final Examinations.....	Wed.-Fri., Dec. 14-16
Grades Due to Admissions and Records from Faculty.....	Wed., Dec. 21

## 1988

<b>September</b>							<b>October</b>							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	
					1	2	3						1	
4	5	6	7	8	9	10	2	3	4	5	6	7	8	
11	12	13	14	15	16	17	9	10	11	12	13	14	15	
18	19	20	21	22	23	24	16	17	18	19	20	21	22	
25	26	27	28	29	30		23	24	25	26	27	28	29	
							30	31						
<b>November</b>							<b>December</b>							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	
					1	2	3	4	5	6	7	8	9	10
6	7	8	9	10	11	12	4	5	6	7	8	9	10	
13	14	15	16	17	18	19	11	12	13	14	15	16	17	
20	21	22	23	24	25	26	18	19	20	21	22	23	24	
27	28	29	30				25	26	27	28	29	30	31	

## 1989

<b>January</b>							<b>February</b>								
S	M	T	W	T	F	S	S	M	T	W	T	F	S		
1	2	3	4	5	6	7						1	2	3	4
8	9	10	11	12	13	14	5	6	7	8	9	10	11		
15	16	17	18	19	20	21	12	13	14	15	16	17	18		
22	23	24	25	26	27	28	19	20	21	22	23	24	25		
29	30	31					26	27	28						
<b>March</b>							<b>April</b>								
S	M	T	W	T	F	S	S	M	T	W	T	F	S		
					1	2	3	4	5	6	7	8	9	10	
5	6	7	8	9	10	11	2	3	4	5	6	7	8		
12	13	14	15	16	17	18	9	10	11	12	13	14	15		
19	20	21	22	23	24	25	16	17	18	19	20	21	22		
26	27	28	29	30	31		23	24	25	26	27	28	29		
<b>May</b>							<b>June</b>								
S	M	T	W	T	F	S	S	M	T	W	T	F	S		
					1	2	3	4	5	6	7	8	9	10	
7	8	9	10	11	12	13	11	12	13	14	15	16	17	18	
14	15	16	17	18	19	20	18	19	20	21	22	23	24		
21	22	23	24	25	26	27	25	26	27	28	29	30	31		
28	29	30	31												

## 1988

<b>September</b>							<b>October</b>							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	
					1	2	3						1	
4	5	6	7	8	9	10	2	3	4	5	6	7	8	
11	12	13	14	15	16	17	9	10	11	12	13	14	15	
18	19	20	21	22	23	24	16	17	18	19	20	21	22	
25	26	27	28	29	30		23	24	25	26	27	28	29	
							30	31						
<b>November</b>							<b>December</b>							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	
					1	2	3	4	5	6	7	8	9	10
6	7	8	9	10	11	12	4	5	6	7	8	9	10	
13	14	15	16	17	18	19	11	12	13	14	15	16	17	
20	21	22	23	24	25	26	18	19	20	21	22	23	24	
27	28	29	30				25	26	27	28	29	30	31	

## 1989 Spring Semester

Residence Halls Open.....	Sun., Jan. 15
Three-Week Session Begins.....	Mon., Jan. 16
Last Day of Three-Week Session.....	Fri., Feb. 3
Registration for 12-Week Session.....	Thurs.-Sat., Feb. 2-4
First Day of Instruction for 12-Week Session.....	Mon., Feb. 6
Last Day of Late Registration.....	Fri., Feb. 10
Last Day to Apply for Spring Graduation.....	Wed., Feb. 15
Drop, Audit or Credit/No Credit Option Deadline.....	Fri., Feb. 17
Spring Recess.....	Fri., Mar. 17
Last Day for Student-Initiated Withdrawals.....	Fri., Mar. 24
Last Day of Instruction.....	Wed., Apr. 26
Final Examinations.....	Wed.-Fri., Apr. 24-26
Commencement.....	Fri., Apr. 28
Grades Due to Admissions and Records from Faculty.....	Mon., May 1

## Northwest Campus

### 1988 Fall Semester

Early Registration.....	Mon., Aug. 29
Registration.....	Mon., Sept. 5
First Day of Instruction.....	Mon., Sept. 12
Last Day of Late Registration.....	Mon., Sept. 19
Last Day to Apply for Fall Graduation.....	Fri., Oct. 14
Last Day for Student-Initiated Withdrawals.....	Fri., Nov. 11
Thanksgiving Holidays.....	Thurs.-Fri., Nov. 24-25
Last Day of Instruction.....	Fri., Dec. 23
Grades Due to Admissions and Records from Faculty.....	Wed., Dec. 28

### 1989 Spring Semester

Early Registration.....	Mon., Jan. 9
Registration.....	Mon., Jan. 16
First Day of Instruction.....	Mon., Jan. 23
Last Day of Late Registration.....	Mon., Jan. 30
Last Day to Apply for Spring Graduation.....	Wed., Feb. 15
Spring Recess.....	Mar. 17-20
Last Day for Student-Initiated Withdrawals.....	Fri., Mar. 24
Last Day of Instruction.....	Fri., May 5
Commencement.....	Thurs., May 11
Grades Due to Admissions and Records from Faculty.....	Wed., May 10

(Note: Dates are subject to change.)

# 1989

<b>January</b>							<b>February</b>						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	1	2	3	4			
8	9	10	11	12	13	14	5	6	7	8	9	10	11
15	16	17	18	19	20	21	12	13	14	15	16	17	18
22	23	24	25	26	27	28	19	20	21	22	23	24	25
29	30	31					26	27	28				

<b>March</b>							<b>April</b>						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
			1	2	3	4							1
5	6	7	8	9	10	11	2	3	4	5	6	7	8
12	13	14	15	16	17	18	9	10	11	12	13	14	15
19	20	21	22	23	24	25	16	17	18	19	20	21	22
26	27	28	29	30	31		23	24	25	26	27	28	29
							30						

<b>May</b>						
S	M	T	W	T	F	S
1	2	3	4	5	6	
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

# 1988

<b>September</b>							<b>October</b>						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
				1	2	3							1
4	5	6	7	8	9	10	2	3	4	5	6	7	8
11	12	13	14	15	16	17	9	10	11	12	13	14	15
18	19	20	21	22	23	24	16	17	18	19	20	21	22
25	26	27	28	29	30		23	24	25	26	27	28	29
							30	31					

<b>November</b>							<b>December</b>								
S	M	T	W	T	F	S	S	M	T	W	T	F	S		
			1	2	3	4	5						1	2	3
6	7	8	9	10	11	12	4	5	6	7	8	9	10		
13	14	15	16	17	18	19	11	12	13	14	15	16	17		
20	21	22	23	24	25	26	18	19	20	21	22	23	24		
27	28	29	30				25	26	27	28	29	30	31		

# 1989

<b>January</b>							<b>February</b>						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	1	2	3	4			
8	9	10	11	12	13	14	5	6	7	8	9	10	11
15	16	17	18	19	20	21	12	13	14	15	16	17	18
22	23	24	25	26	27	28	19	20	21	22	23	24	25
29	30	31					26	27	28				

<b>March</b>							<b>April</b>						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
			1	2	3	4							1
5	6	7	8	9	10	11	2	3	4	5	6	7	8
12	13	14	15	16	17	18	9	10	11	12	13	14	15
19	20	21	22	23	24	25	16	17	18	19	20	21	22
26	27	28	29	30	31		23	24	25	26	27	28	29
							30						

<b>May</b>						
S	M	T	W	T	F	S
1	2	3	4	5	6	
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			



Yumiko Kato, a senior wildlife management student, searches through the stacks in the Rasmuson Library.



# General Information

## University of Alaska Fairbanks

### Special Mission

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 state 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 currently 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 non-renewable 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 and rural populations. In accomplishing this mission, the University seeks the advice and guidance of Alaska's residents and friends.

### Student Rights Under Title IX

Title IX of the Education Amendments of 1972 was enacted to ensure that complete equality of education is afforded to all students, both male and female. This means that in every program, policy and practice at the UAF, there will be no discrimination on the basis of sex. Included in the areas covered by this law are: admissions, financial aid, counseling, health services, student activities and programs, and access to all course offerings, to name a few.

The Fairbanks campus Title IX coordinator is located in Room 101 of the Eielson Building. All concerns and/or allegations that relate to Title IX are to be directed to the Fairbanks campus Title IX coordinator.

### Historical Dates

**1917** - Alaska Agricultural College and School of Mines created by the Territorial Legislature.

**1922** - College opens with six faculty members and six students.

**1923** - First Commencement held for first graduate.

**1935** - Territorial Congress changes college name to the University of Alaska.

**1946** - Geophysical Institute established by an Act of the U.S. Congress.

**1947** - First summer session established at the university.

**1957** - First Ph.D. degree awarded at the university.

**1960** - Institute of Marine Science established by the Alaska Legislature.

**1963** - Institute of Arctic Biology established by the Alaska Legislature.

**1975** - Creation of the UA System, with campus-specific administrations—Fairbanks campus referred to as UAF from now on.

**1980** - Museum moves into Otto Geist Building.

**1981** - Enrollment tops 5,000 students for the first time.

**1984** - Increasing international awareness results in emphasis on cooperative agreements with international universities.

**1986** - GNOSIS computer cataloging library system comes on-line.

**1987** - Restructuring of the UA System produced a multi-campus University of Alaska Fairbanks with campuses in Fairbanks, Bethel, Nome and Kotzebue.

### Accreditation/Memberships

UAF is accredited as an institution of higher learning by the Commission on Colleges of the Northwest Association of Schools and Colleges.

\* Juneau fisheries students should also reference the University of Alaska Southeast catalog.

In addition, UAF has received for certain of its programs the accreditation extended by specialized national agencies, including the American Chemical Society, the Accreditation Board for Engineering and Technology, the American Association of Museums, the Accrediting Council on Education in Journalism and Mass Communication, the National Association of Schools of Music, the National Council for Accreditation of Teacher Education, the American Assembly of Collegiate Schools of Business, the Alaska State Board of Education in accordance with standards set by the National Association of State Directors of Teacher Education and Certification and the Council on Social Work Education.

UAF is affiliated with the National Association of State Universities and Land-Grant Colleges and holds institutional membership in the American Council on Education, the American Association of State Colleges and Universities, the Council of Graduate Schools in the United States, the Western Association of Graduate Schools and the Western Interstate Commission for Higher Education.

In addition, UAF holds official designation as both a land-grant and sea-grant institution. In 1917, the federal government gave land-grant status to the university, and in 1980 sea-grant status was added.

## UAF Governance

Students (ASUAF), faculty (Faculty Senate) and staff (Staff Council) are represented by individual governance structures which address their concerns. The UAF Assembly provides a forum for the three individual governance bodies to address common concerns.

The governance organizations function as legislative and consultative bodies having primary authority to initiate, develop and review policies pertinent to UAF.

ASUAF is responsible for those issues which are uniquely student affairs issues. The Faculty Senate is responsible for those issues which are uniquely faculty purview. The Staff Council is responsible for those issues which are uniquely staff affairs issues.

Actions by each governance body are forwarded for consideration to the chancellor's office which shares in the responsibility for campus governance. All governance activities are subject to the authority of Board of Regents policy.

ASUAF information can be obtained by calling 474-7355. All other governance information is coordinated through the UAF Governance Office in 312 Signers' Hall. The phone number is 474-7056 or 474-7964.

## Transportation to the University

The city of Fairbanks is served by air, rail and highway.

The UAF campus is some four miles west of the Fairbanks central business district. A bus line offers service between the campus, downtown, the airport, and surrounding areas. Bus service is frequent, providing reliable transportation to and from most areas.

UAF also has on-campus shuttle service between the lower campus area and the West Ridge facilities.

## The Rural College

Rural higher education in Alaska has experienced problems that originated because the responsibility for various rural programs resided in different independent units of the statewide university system. This resulted in a variety of models, different sets of rules, and problems for students associated with transfer, transcribing, financial aid and degree articulation between associate and baccalaureate programs. The recent university restructuring has resulted in the consolidation of these dispersed units in the northern, western and southwestern parts of the state into one Rural College which has the mandate not only to continue existing traditional research and instructional programs but also to assist with developmental activities in the rapidly changing socioeconomic context of rural Alaska. Through the Rural College the university has the opportunity to fulfill its service responsibility as a land-grant/sea-grant institution and to capitalize on the unique aspects of the Arctic social and cultural environment.

The Rural College is the integration of the following pre-existing institutions: Chukchi, Kuskokwim and Northwest Community Colleges; the Aleutians, Bristol Bay, Ft. Yukon, Galena, McGrath, Nenana and Tok rural education centers; the College of Human and Rural Development in Fairbanks; the Correspondence Study Program in Fairbanks; and the Alaska Native Human Resource Development Program, previously part of the Cooperative Extension Service, centered in Anchorage. Additionally the North Slope Higher Education Center has a cooperative agreement with the college. All of these programs have been reorganized into six campuses: Bristol Bay centered in Dillingham; Chukchi centered in Kotzebue; Interior centered in Fairbanks with regional centers in Ft. Yukon, Galena, McGrath, Nenana and Tok; Kuskokwim centered in Bethel; Northwest in Nome; and the programs on the Fairbanks campus. These are described in more detail below.

## Chukchi Campus in Kotzebue

The Chukchi Campus is located in Kotzebue, Alaska, on the northwest shore of the Baldwin Peninsula, 30 miles above the Arctic Circle. It serves the NANA Region of northwest Alaska—an area of more than 36,000 square miles—which is about the size of the state of Indiana. This area lies almost totally north of the Arctic Circle. The population of the NANA Region is approximately 6,000, 88 percent of whom are Inupiaq Eskimo. This population is distributed throughout 11 villages which range in size from approximately 70 people in Kobuk to 3,000 in Kotzebue, the transportation-communication hub of the region. The 11 villages are not connected by road, nor is the region connected to the rest of the state by any road system. Transportation to and from the villages is limited to light aircraft, snow machines in winter and boats during the brief periods of open water.

With its special emphasis on the academic program in support of the associate of arts degree, Chukchi offers about 28 academic, lower division courses in each of two semesters—September through May. Because of the geographic isolation, transportation and population limitations of the region which Chukchi serves, the college has developed and implemented a comprehensive field-delivered A.A. degree program. Courses are delivered to students in their home villages through extensive use of audioconferencing, Student Instructional Meetings, and instructor travel to villages. Audioconferencing and computer-assisted instruction, while significant and invaluable tools to Chukchi in its delivery efforts, are only two important parts of the total delivery program. In addition to the Student Instructional Meetings and Instructor travel mentioned, Chukchi uses comprehensive course outlines/syllabi, telephone, television and video and audio tapes, and the personal contact of the Village Academic Coordinators.

## Kuskokwim Campus in Bethel

The Kuskokwim Campus can most accurately be described as a regional center serving an extended community.

The region is composed primarily of treeless tundra, with some birch and spruce forests on the northern and eastern edges. On the west, the region is bordered by the Bering Sea. The climate ranges from maritime days of 70 degrees F during the short summer months to arctic winter conditions that include chill factors to -100 degrees F.

The majority of the 19,000 residents of the Delta are Yup'ik Eskimos who live in villages of 200 to 500 people. The city of Bethel, located 80 miles inland on the Kuskokwim River, is a community of approximately 4,000 and serves as the headquarters of the campus. Bethel is also the transportation and service center of the region.

Commercial and subsistence fishing is a major economic activity of the Delta. For many families it constitutes the only income and the major source of food. Traditional hunting activities also play an important role in the subsistence life style, involving the taking of such species as seal, walrus, waterfowl and moose. Seasonal employment is found in fisheries and transportation. Year-round employment is largely found in providing public services, e.g., education, health care, social services, and public administration.

In many villages the primary language of the people continues to be Yup'ik, and the residents proudly retain their traditional cultural values. Many college students within the region seek ways of blending this inherited wisdom with a knowledge of today's western technology in the interest of creating a modern Yup'ik world.

## Northwest Campus in Nome

In accordance with the University of Alaska's philosophy of taking higher education to the people, Northwest Campus serves not only the residents of Nome, where it is located, but also the people in the 15 regional villages surrounding Nome. Six of these villages (Gambell, Savoonga, Unalakleet, Stebbins, Shishmaref and Koyuk) have village-owned adult learning centers.

Northwest offers a general program of the first two years of a college curriculum, including courses leading to the associate of arts and associate of applied science degrees. In addition, the curriculum provides a good basis for pursuit of a bachelor's degree at other institutions. A number of vocational and general interest courses are also taught.

Northwest is small, with the majority of students attending on a part-time basis. Class sizes range from six to 20 students so personal attention is optimum. Many of the courses taught are individualized, or self-paced. A sophisticated telecommunications system allows most courses to go to communities outside of Nome. Workshops are held in Nome which stress "hands-on" experience. The programs and courses offered are focused both on the career development and personal growth of the permanent residents of western Alaska and the needs of the communities themselves.

## Interior Campus

The Interior campus is composed of university centers in the villages of Fort Yukon, Galena, McGrath, Nenana, Tok and the Aleutians. The centers are a unified network for delivering university services with college-wide resources and many common programs. The centers vary widely from one another in ethnic background, population density and geographic conditions. Each center's program is defined by expressed needs for education and reflects geographical and social/economic conditions in the service areas—semi-urban commercial fishing centers, highway communities and small bush villages.

The **Fort Yukon Center** serves the Upper Yukon Valley from Circle in the south and Chalkyitsik in the east, north to Arctic Village in the beginnings of the Brooks Range and downriver to Rampart in the west. The region covers about 53,000 square miles and has a population of 2,000 people who are predominantly Gwich'in Athabaskan. Except for Circle, which is accessible by road, the villages of the region rely on air and extensive water systems for transportation. The economy is based on subsistence activities and trapping; sources of wage employment are government, education, Tanana Chiefs Conference, village corporations and some private businesses. Each semester, in addition to a slate of courses in all the discipline categories needed to meet A.A. degree requirements, the center seeks to provide educational and vocational opportunities which reflect a culture that relies heavily upon subsistence activities. The courses offered are varied and determined by the requests of the community members.

The **Galena Center** serves villages in interior Alaska along the Yukon and Koyukon rivers. The region has a population of about 4,500 people and there is little in the way of cash economy. No roads serve the area and transportation is by small aircraft, riverboat or snowmobile. During the past three years, the Galena Center has grown significantly. The center has conducted classes in the areas of business, accounting, computers, management, welding, small engine repair, equipment maintenance and operation, private pilot ground school, Native art, basic English and math skills, and a variety of humanities courses.

The **McGrath Center** serves an area the size of Ohio, including the communities of McGrath, Nikolai, Medfra, Telida and Takotna on the Upper Kuskokwim River and Shageluk, Grayling, Anvik and Holy Cross on the Yukon River. McGrath serves as a commercial and transportation hub for the area. Many residents of the area engage in seasonal work and are partially dependent on a subsistence lifestyle. It is the aim of the center to assist area residents in meeting their educational goals. For some, this means improving or gaining job-related skills such as typing, accounting or programming a microcomputer. Others are interested in working toward a college degree or want to develop a personal interest such as art or philosophy.

The **Nenana Center** encompasses 100 miles along the Parks Highway and the two small villages of Manley Hot Springs and Minto. The

communities along the highway are Nenana, Clear Air Force Base, Anderson, Brown's Court, Healy, Cantwell and McKinley Park. This widely diverse area has many different economic capabilities and an array of people spanning many walks of life from self-educated people who still depend on and enjoy the subsistence type of lifestyle to those interested in computer learning and degrees. Classes through the center are held in many different locations. The region encompasses three school districts, all of which cooperate in the use of their buildings and audio/video equipment. The courses are offered in a variety of ways: lecture, correspondence, combination of lecture/correspondence with a visiting professor, multi-media, independent study, small group instruction or module method with the instructor used as a resource person. All students in the region now have easy access to courses which are offered on a sequential basis leading to the fulfillment of the general education requirements for an associate of arts degree. The center serves as an educational information center which helps deliver the needed answers to problems and plan education and professional programs.

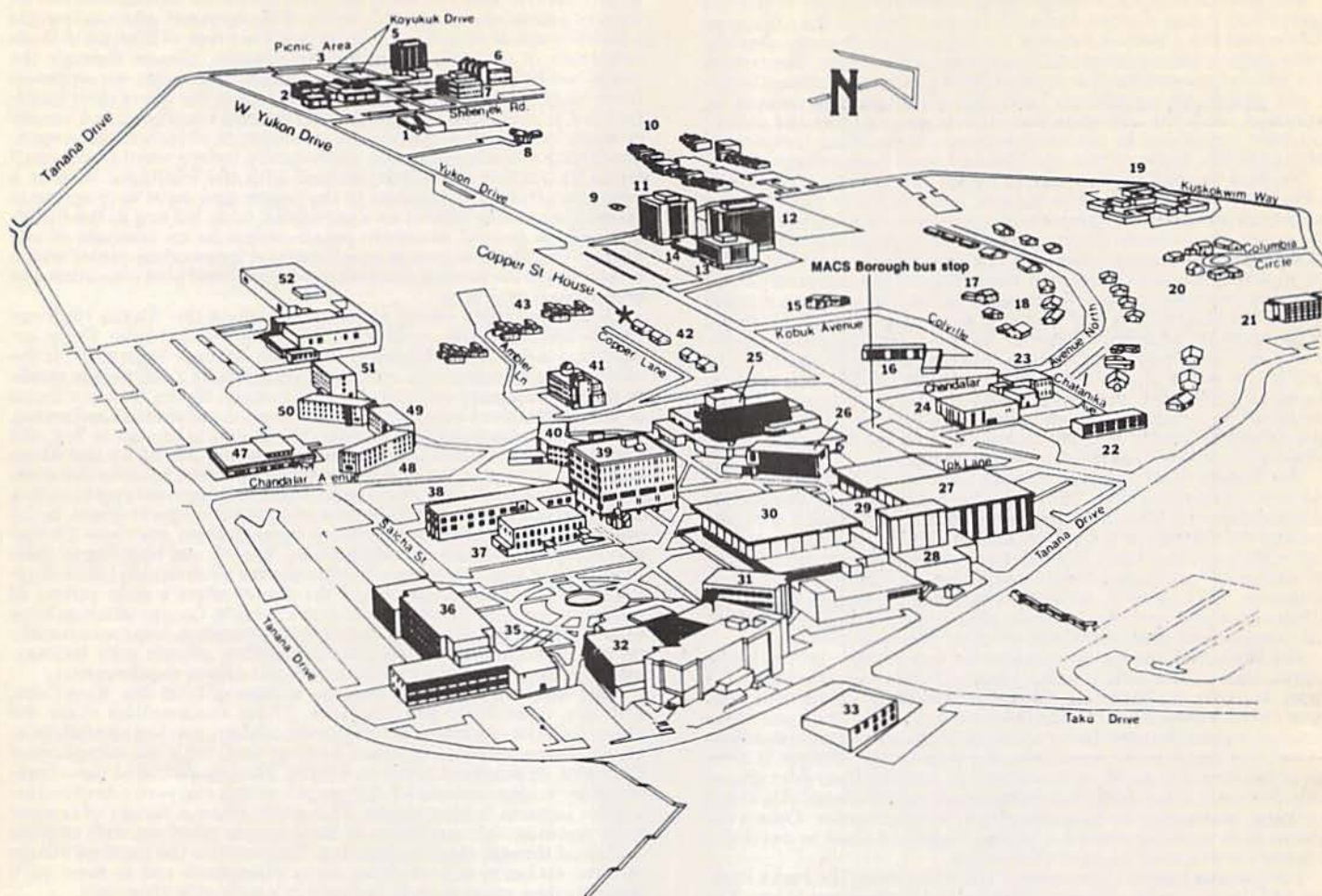
The **Tok Center** serves communities along the Alaska Highway system including Tok, Northway, Tanacross and Dot Lake. Eagle, accessible via the Taylor Highway from May through September, is the northernmost community served. Approximately 2,500 people reside in the 30,000-square-mile service area in small towns, Native villages or widely scattered homesites. The population consists of Caucasians, minorities and Athabaskan Indians. The center is located in Tok, the major commercial center for travelers entering Alaska on the Alcan Highway. Numerous businesses and facilities exist to serve the summer tourists as well as the local population. Employment opportunities are found in tourism, social services, education and government. In the outlying communities, employment opportunities are more limited and many individuals include hunting, fishing and trapping in their livelihood. Responsiveness to local needs is a determining factor shaping the Tok Center program and the center offers a wide variety of courses to meet the diverse needs of its clientele. Course offerings have included business and computer science, education, basic vocational/industrial skills, paraprofessional counseling, private pilot training, office skills, art and general education, and degree requirements.

The **Aleutian Center** services the villages of Cold Bay, King Cove, Pribilofs, Sand Point and Unalaska. These communities share the characteristics of a relatively temperate climate, marked rainfall, mixed Aleut-Scandinavian-Russian heritage and, with the exception of Cold Bay, an economy based on fishing. The population of these communities is approximately 5,000 people, which can easily double during the summer fishing season. The center offers a variety of courses each semester and augments its local course offerings with courses delivered through teleconferencing. This enables the smallest village to have access to experts from many disciplines and to meet with students from other parts of the state in a statewide classroom.



Vera Manutoli, a freshman at the Kuskokwim Campus in Bethel, is from Akiachak.

# Fairbanks Campus Map



## UNIVERSITY OF ALASKA FAIRBANKS

- |  |   |
|--|---|
| Arctic Health Research Building 2              | Irving Building 7                             |
| Brooks Building 31                             | Lola Tilly Commons 47                         |
| Bunnell Building 36                            | McIntosh Hall 48                              |
| Chapman Building 41                            | Moore, Bartlett and Skarland Halls 11, 12, 13 |
| Constitution Hall 26                           | Nerland, Stevens and Lathrop Halls 49, 50, 51 |
| Duckering Building 32                          | O'Neill Building 6                            |
| Eielson Building 38                            | Patty Athletic Center 52                      |
| Elmer E. Rasmuson Library 30                   | Regents' Great Arts Hall 29                   |
| Elvey Building 5                               | Stuart Hall 16                                |
| Fine Arts Complex and Fine Arts Theater 27, 28 | Student Apartment Complex 10                  |
| Gruening Building 39                           | Signers' Hall 37                              |
| Harwood Hall 21                                | University of Alaska Museum 1                 |
| Health, Safety and Security Building 24        | Walsh Hall 22                                 |
| Hess Commons 14                                | Wickersham Hall 40                            |
| Hess Complex 19                                | Wood Center 25                                |

# Undergraduate Admissions

## Admission Requirements for Baccalaureate Degree Programs

### Freshmen

To qualify for admission as a freshman in a bachelor's degree program, one must be a high school graduate and must have a high school grade point average (GPA) of 2.00(C) or higher. All entering freshmen are required to submit the results of either an ACT or SAT examination for the semester beginning in September 1989.

In addition, the applicant must complete with a minimum grade point average of 2.00 (C) a core curriculum of at least 11 academic credits, including at least three credits in English, two in mathematics, two in social sciences, and two in natural or physical sciences (including at least one laboratory course if offered by the high school).

Freshmen planning entry in September 1991 must have a cumulative GPA of 2.00 and a 2.50 average in a core curriculum consisting of at least 16 academic units. The units include four credits in English, three in mathematics (including Algebra II, geometry and trigonometry), 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 is strongly recommended.

### HIGH SCHOOL ENTRANCE CREDIT REQUIREMENTS FOR ALL BACHELOR'S DEGREE PROGRAMS:

(Total of 11 academic credits required including those listed below.)

	English	Mathematics	Social Science	Natural/ Phys. Sci.
<b>H.S. Core Courses:</b> Required for all freshmen (2.00 gpa in core-11 credit total)	3	2	2	2 (Incl. 1 cr. lab. sci.)
<b>College of Liberal Arts:</b> Applied Statistics, Computer Science or Mathematics majors	3	Algebra-2 Geometry-1 Trig-½ Adv Math-½	2	Nat. Science-1 Physics or Chemistry-1
Physical Educ. majors	3	Algebra-2	2	Biology-1 Physics or Chemistry-1
All Other Liberal Arts majors	Same as Core			
<b>College of Natural Sciences:</b> All majors	3	Algebra-2 Geometry-1 Trig-½	2	Physics or Chemistry-1 Biology or Elective-1
<b>Rural College</b> All majors	Same as Core			
<b>School of Agriculture and Land Resources Management:</b> Land Resources Mgt. majors	2	Algebra-2 Geometry-1 Trig-½	2	Physics or Chemistry-1 Biology or Elective-1
<b>School of Engineering:</b> All majors	3	Algebra-2 Geometry-1 Trig-½	2	Chemistry-1 Physics-1
<b>School of Fisheries and Ocean Sciences:</b> All majors	3	Algebra-2 Geometry-1 Trig-½	2	Physics or Chemistry-1 Biology or Elective-1

<b>School of Management:</b> All majors*	3	Algebra-2 Geometry-1 Trig-½	2	2 (Incl. 1 cr. lab. sci.)
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\*Two years Foreign Language highly recommended.

<b>School of Mineral Engineering:</b> All majors	3	Algebra-2 Geometry-1 Trig-½	2	Physics or Chemistry-1 Nat. Sci.-1
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### Transfer Students

Generally, a transfer applicant who has attended another accredited institution is eligible for admission provided he/she has a 2.00 ("C") grade point average in his/her previous college work and an honorable dismissal from the schools previously attended. An applicant desiring to enter a technical and/or scientific major may be required to present a higher grade average and evidence of completion of background courses before admission can be granted. A transfer student with fewer than 30 semester hours of transferable credit must also have a high school GPA of 2.00(C) or higher and is required to complete the ACT placement test prior to registration.

## Admission Requirements for Associate Degree and Certificate Programs

### Freshmen and Transfer Students

A student who does not desire admission to a baccalaureate degree program at the University of Alaska, or who does not qualify for admission to a bachelor's program, may apply for admission to an associate degree program or to a certificate program.

The following programs are available.

1. Associate of Arts degree
2. Associate of Applied Science degree
3. Certificate programs

In general, to qualify for admission to an associate degree program, one must be a high school graduate or 18 years of age or older. In addition, admission to some certificate programs requires permission from the appropriate department.

After completion of 30 semester hours of work in which the cumulative grade point average is 2.0 or higher and the last semester is in good standing (semester GPA of 2.0), individuals may apply for acceptance into a bachelor's degree program. They also may choose to remain in the associate or certificate program until it is completed and then enter a bachelor's degree program.

Official transcripts will be required for entry in to all associate and certificate programs as well as results of the ACT test which will be used for placement. Students qualifying for entry into an associate or certificate program do not need to submit ACT results if they have transferred in 30 semester hours of work which includes appropriate courses in English or mathematics.

All walk-in candidates for admission must provide official transcripts of previous high school or college work. An admission decision may be made based on unofficial transcripts but admission will be conditional until the official records are received.

## Admission Requirements for Others

**Auditors** — An auditor is a student who enrolls for informational instruction only and does not receive academic credit, have laboratory privileges, and may not submit papers for correction and grading. An auditor must apply for admission, register formally on the designated registration dates, obtain approval of the class instructors, and pay the required fees. Fees for auditing one or more classes are the same as those paid for taking one or more courses for credit.

**International Students** — Additional admission requirements apply to international students and recent immigrants to the United States.

**English Language Proficiency Policy** — In addition to meeting regular admission requirements, an international student must be able to read, write and speak the English language well enough to do college level work successfully.

1. Applicants from countries where English is not the native language must present a satisfactory score on the Test of English as a Foreign Language (TOEFL). No other test can be used, nor may

any other proof of English competency be substituted (such as English credits from other schools).

2. A TOEFL score is required for Permanent Residents (immigrant visa) when all the formal education of the applicant is from a country where English is not the primary language, or if the documents presented for admission do not clearly indicate the applicant's proficiency in English.
3. For undergraduate admission, applicants must present a TOEFL score of at least 550.
  - a. A request for waiver of the TOEFL requirement must be addressed to the Foreign Student Adviser. Such requests will be approved only under exceptional circumstances.
4. For graduate admission, applicants must present a TOEFL score of at least 550.
  - a. Graduate applicants who present scores below 550 may request a waiver of the TOEFL requirement from the Foreign Student Adviser. The Foreign Student Adviser will make such recommendations subject to final review and approval by the Dean of the Graduate School and the cognizant academic dean.
  - b. A waiver will be granted only under exceptional circumstances, at the discretion of the Foreign Student Adviser. If a waiver is granted, it will include a requirement for enrollment in appropriate English as a foreign language (EFL) courses with a corresponding reduction in the graduate course load. The Foreign Student Adviser will determine that EFL class space is available prior to granting the waiver.

**Other Requirements** — In addition, when preparing the I-20 form that is necessary to obtain an F-1 (student) visa (a J-1 exchange visa may be more appropriate for some graduate students), the university must certify to the Immigration and Naturalization Service (INS) that the prospective student has been accepted for full-time enrollment and has sufficient funds to meet estimated expenses for one academic year. Foreign students on F-1 visas must maintain a full-time course load; they may not enroll as part-time students (less than 12 undergraduate or nine graduate credits). A foreign student must sign a statement that he/she has sufficient funds to pay all of his/her expenses while attending UAF, as well as the amount needed to pay his/her round trip transportation costs between his/her home and Alaska. The minimum cost for attending UAF for one school year is \$5,500 or more (at least \$6,300 for graduate students). This amount covers all university fees, room and board on campus, and a reasonable amount of personal expenses including transportation. It does not include summer living or cold weather clothing costs. Since the issuance of an F-1 visa requires a foreign student to affirm that he/she does not intend to make the United States his/her permanent residence, he/she may not be considered for resident tuition fees.

Since processing applications for international students takes several weeks, the application must reach Admissions and Records prior to May 15 for consideration for the fall semester. A person cannot make reservations for on-campus housing until his/her application for admission has been accepted. Therefore, we recommend that application for admission materials be filed at least eight months prior to the date the applicant plans to enroll if he/she is interested in single student housing.

**High School Students** — Qualified high school students of advanced standing and ability are permitted to enroll in one or two UAF courses while attending high school. To qualify for admission while attending high school, a high school student must present written recommendation of his/her high school counselor or principal, the written approval of his/her parents, and an official transcript indicating a satisfactory GPA in his/her high school work. High school seniors with GPAs of 2.5 or higher may register for two college courses for a maximum of six credits. High school seniors with GPAs of 2.0 to 2.5 may register for one college course per semester. Juniors with GPAs of 2.75 or higher may register for one college course per semester. Qualified high school students of less than junior standing may register for one course per semester with the approval of the Director of Admissions and Records.

**Non-Degree Students** — In order to attend as a non-degree student, one must be a high school graduate or 18 years of age or older. A non-degree student is limited to enrollment in no more than six credits per semester and is subject to the placement examination requirements for freshman level courses. A non-degree student may register in more than six credits in a regular length semester as long as the enrollment is in no more than two courses. A non-degree student is subject to the academic regulations of UAF and is required to maintain a 2.00 average in order to remain in good standing. A non-degree student is not considered a degree candidate until regular admission requirements are met and transcripts filed.

## Admission Requirements for Students with Bachelor's Degrees

**Non-Degree Programs** — An applicant who holds a bachelor's degree but has not defined or declared his/her graduate program may be admitted as a non-degree seeking student if space permits. Students in this category include:

1. Those who plan to take "interest courses."
2. Those completing work for a teaching certificate.
3. Those strengthening their preparation in order to be admitted to graduate study.
4. Transient students expecting to be at UAF only briefly.
5. Students awaiting action on applications for graduate status.

**Second Bachelor's Degree Programs** — Those applicants who wish to complete second bachelor's degrees must formally apply for admission as undergraduate transfer students.

## Transfer of Credit

Credit accepted for transfer to UAF which has been earned at other units of the UA system, at other accredited institutions, through military educational experiences or credit accepted by special approval shall be considered as transfer credit. Where possible, transfer credit will be equated with UAF courses.

The following regulations apply to transfer of credit:

1. Only persons accepted as undergraduate degree candidates at UAF are eligible for transfer of credit.
2. A maximum of 72 semester hours of credit will be accepted from junior and community colleges, cumulative from within and outside the UA system for baccalaureate degree students.
3. A student in good standing (C average or higher) may transfer his/her credits from other UA units to UAF under the following conditions:

The evaluation of UA college credit will follow the recommendations which appear in the *Alaska Transfer Guide* as prepared by the Alaska Commission on Postsecondary Education. Copies of the *Guide* are available at all UA units.

Course credit at the 100-level or above from the University of Alaska Anchorage and the University of Alaska Southeast, shall be accepted at full credit.

According to the provisions of the University of Alaska System Transfer Agreement, admission to baccalaureate programs at UAF is subject to timely completion of the appropriate application procedures and to the availability of space. Transfer of 34 credits toward any UAF baccalaureate degree will be offered to those students who have earned the associate of arts degree at UAF or other UA colleges or who have completed course work as described in the agreement. Additional credit will be accepted up to the 72 credit limit as specified in the general transfer policy.

The 34-credit general education requirement outlined in the transfer agreement is intended to provide the nucleus of a broad cultural background that includes a critical awareness of the human heritage, of the challenging requirements and opportunities of the present and future, and of the complexities and possibilities of the human mind and personality. Self-fulfillment and excellence in a career in the arts, in the professions, in the sciences, or in any of the many ways in which a student may eventually serve our society will depend in large measure upon the breadth of this background.

Students admitted under the transfer agreement who have satisfactorily completed course work at the 100-level or above which meets the following criteria shall be considered to have met 34 credits of general education requirements, applicable to baccalaureate degrees at UAF. Credit may be counted toward general education requirements or major requirements, but not both.

Written Communication Skills .....	6 credits
Oral Communication Skills .....	3 credits
Humanities/Social Sciences .....	15 credits
At least three credits in the arts	
At least three credits in the general humanities	
At least six credits in the social sciences, from two different disciplines	
Quantitative Skills/Natural Sciences .....	10 credits
At least three credits of quantitative skills	
At least four credits of natural sciences, including one laboratory course	
<b>TOTAL .....</b>	<b>34 credits</b>

### NOTE:

- (1.) Course work applicable to general education requirements at UAF is identified in the *Alaska Transfer Guide* and in the course description section of this catalog.
- (2.) Additional general education requirements beyond this 34 credit core are required for individual baccalaureate degrees.
- (3.) Credit awarded through such means as petitions, examinations, or credit for life experiences by a community college will be subject to validation by UAF.
4. Credits earned at the 100-level or above with grades of C or higher at other accredited institutions normally will be accepted by transfer. UAF reserves the right to reject work of doubtful quality or to require an examination before credit is allowed.

- Eight elective credits may be awarded by transfer to students having completed at least one calendar year of military service. In addition, credit also may be transferred from formal service schools as recommended in the *Guide to the Evaluation of Educational Experiences in the Armed Services*, as prepared by ACE. Credit is transferred for the successful completion of Defense Activity Non-Traditional Education Support (DANTES) tests as recommended by the American Council on Education provided the score received is 50% or higher. A maximum 30 credits awarded for military service and/or formal service schooling can be applied toward a bachelor's degree. The completion of course work taken through the Community College of the Air Force is considered military credit and is subject to the same restrictions.
- Special review for approval of the transfer credit not meeting the requirements stated above may be requested from the Director of Admissions and Records.
- The applicability of any transfer credit to major and/or minor requirements is subject to approval by the appropriate major and/or minor department. Transfer students must fulfill the graduation and residency requirements of UAF, including those which may be required for a particular program.
- Transfer credit is not included in UAF grade point computation.
- The class standing of an entering transfer student is based upon the number of credits UAF accepts of his/her previous college work. A student who transfers from an accredited technical college or special purpose institution may find that many credits are considered "elective." In such a case, the student should not assume that the class standing he/she has been assigned accurately represents his/her progress toward a degree at UAF.

## Course Placement

The American College Testing Program (ACT) and other placement tests must be taken before a new student with less than sophomore standing may complete registration.

On the basis of test scores, a student whose background appears to be deficient in English and mathematics may be required to take remedial English and mathematics or both in addition to the requirements of his/her chosen curricula. Achievement in these subjects is essential to success in other study areas. The basic English and mathematics courses are especially designed to assist the student in achieving competency in minimum time.

Generally, placement in Engl. 111 will be made if both ACT English and composite scores are 16 or above.

Placement in mathematics courses is usually based on a combination of the ACT mathematics score plus the number of semesters of high school mathematics completed. Generally, the following scores and semesters of high school mathematics give placement in the courses indicated:

ACT Math Score	Number of Semesters of High School Math	UAF Math Placement
26 or higher	with 1-8	See Math Department
21 to 25 with	6-8	Math 107, 161, 171
21 to 25 with	less than 6	See Math Department
19 to 20 with	7-8	Math 107, 161, 171
19 to 20 with	less than 7	See Math Department
17 to 18 with	8	Math 107, 161, 171
17 to 18 with	4-7	See Math Department
17 to 18 with	less than 4	DEVM/Math 076
13 to 16 with	1-8	DEVM/Math 076
12 or below	1-8	DEVM/Math 075

A student continuing the study of foreign language begun in high school will be required to take a placement test. If he/she fails to place at the level appropriate to the amount of previous language study, he/she will be allowed to enroll for credit in a course that is one semester below his/her level. Work more than one semester below the normal level will be considered remedial, and although not a prerequisite to further study, will carry no credit.

## Advanced Placement

**Advanced placement credit through College Entrance Examination Board (CEEB)** — UAF grants advanced credit with waiver of fees, for satisfactory performance (a score of three or higher) in the College Board Advanced Placement Tests. These tests are normally completed by students during their senior year in high school.

A student desiring CEEB Advanced Placement credit must request that an official report of his/her scores on the examination be sent to the Office of Admissions and Records and upon his/her enrollment will be awarded appropriate credit. Students may receive credit for more than one Advanced Placement examination.

## Local Advanced Placement Credit

Placement in an advanced course is available in some units through local placement tests given at the time of the student's registration. Under some circumstances, advanced placement credit also may be awarded with waiver of fees after the student has satisfactorily completed the advanced course. The following advanced placement policies have been established:

**English** — An incoming freshman whose English ACT score is 26 or higher may receive credit for English 111 by enrolling in a 200 or 300 level literature course and completing it with a grade of "C" or better. Or, the student may receive credit for English 111 by waiting until he/she has sophomore standing (30 credits or more) and then completing English 211 or 213 with a grade of "C" or better. It is the responsibility of the student to submit an "Application for English 111 Credit" form to the Office of Admissions and Records at the end of the semester in which an advanced English course described in the above policy was completed.

**Foreign Language** — A student with previous exposure to a language outside of college who wants to continue studies in that language is expected to take a placement test so that the course level most beneficial to him/her can be determined.

Upon completion of the course in which he/she has been placed with a grade of "C" or higher, the student will receive credits for that course and, in addition, for the two immediately preceding prerequisite courses, if any, unless he/she has received university credit for these already. A native speaker may not receive credit for 101 and 102 levels.

This policy does not apply to any special topics courses nor to the individual study courses inasmuch as they represent special practice activities and teach special skills, nor to literature or civilization courses.

**Mathematics** — Placement in mathematics courses is determined by ACT mathematics scores and the number of semesters of mathematics completed in high school. If a student completes Math 201, 202, 273 or 302 with a grade of C or better, the student may also receive credit for any prerequisite calculus course.

## Academic Bankruptcy for Returning Students

Students occasionally perform at an academic level which makes them ineligible to continue their studies, and they drop out or are dismissed from school. Subsequently, some want to resume their college work but find their previous academic record an obstacle.

Persons who want an opportunity for a fresh undergraduate start at UAF may apply for readmission on the basis that their prior academic record be disregarded and they begin their college study again with no credits attempted and no credits and quality point earned reflected in subsequent grade point average calculations. This policy may be used by a student only once and is applicable only to students enrolled at UAF and only for UAF credits. Academic bankruptcy for records from UAF units which were not part of UAF prior to Fall 1987 may be requested at the time of admission or readmission to undergraduate status.

To declare academic bankruptcy, a student must submit the Application for Academic Bankruptcy form and secure the approval of the dean of the college or school to which the student is admitted or readmitted. Prior to applying for admission on this basis, at least two years must have elapsed since the end of the semester in which the applicant was last in full-time attendance at school.

The prior academic record remains a part of the student's overall academic record, but none of it is carried forward and none of the credits earned previously can be used in the new program. These credits will be included, however, in computations for graduation with honors (See "Graduation with Honors"). Students showing competency in any area may be allowed advanced standing or a waiver of requirements just as any non-bankrupt student, but will not be allowed credit-by-examination for courses lost in bankruptcy.

## Applying for Admission

### When to Apply

It is recommended that seniors in high school make application for admission during the first semester of their senior year if they plan to enroll at the university during the next fall semester. Transfer and graduate students should make application at least nine months prior to the beginning of the semester in which they plan to enroll at UAF. Applications for admission should be submitted not later than August 1 for the fall semester and December 1 for the spring semester. Applications received after these dates will be processed if time permits and space is available.

A person cannot make reservations for on-campus housing until his/her application for admission has been accepted. It is recommended that application for admission materials be filed at least six months prior to the date the applicant plans to enroll if he/she is interested in



single student housing. For information about availability of married student housing, contact the housing office.

### How to Apply

Application forms may be obtained from the Office of Admissions and Records. Applications for admission will be considered only when the following credentials have been received by the Office of Admissions and Records:

1. **Application for Admission** — A \$20 processing fee must accompany the completed application for admission form.

2. **Transcripts** — An applicant who has never previously enrolled in any college or university must have an official high school transcript sent from the high school from which the applicant has graduated or will graduate to the Office of Admissions and Records. The transcript is not acceptable if submitted directly to the university by the applicant.

An applicant who has attended other colleges and/or universities is required to request official transcripts from each college or university attended be sent directly to the Office of Admissions and Records. **TRANSCRIPTS WILL NOT BE ACCEPTED IF SUBMITTED TO THE UNIVERSITY BY THE APPLICANT.**

A transfer applicant with less than 30 semester hours of credit is required to submit a high school transcript as well as college transcripts. Such an applicant should follow the instructions given above for having official transcripts from high school and other colleges and/or universities sent to the University of Alaska Fairbanks.

3. **Test Results** — As of Fall 1989, all entering freshmen are required to submit results of either an ACT or SAT examination as part of their admissions credentials.

### Conditional and Final Acceptance

After the required credentials are received, reviewed and processed, a statement of acceptance will be mailed to the qualified applicant. The statement of acceptance will contain the conditions under which the applicant has been admitted.

Qualified applicants can be accepted for admission while enrolled in their last year of high school or another college. However, the acceptance may be conditional upon receipt of an official transcript indicating satisfactory completion of the work in progress at the time of

acceptance or, in the case of a high school senior, completion of graduation requirements.

Final acceptance to UAF for the purpose of earning scholastic credit becomes complete only when all credentials have been received and accepted by the Director of Admissions and Records.

Acceptance of a student for enrollment at the University of Alaska Fairbanks constitutes an agreement of mutual responsibility. The student agrees to abide by established rules and policies and to act in a responsible, mature manner. The university's part is to provide an appropriate academic atmosphere.

### Placement Test Requirement

Results from the tests prepared by the American College Testing Program (ACT) are required for all first-time degree or certificate students or any students planning to take 100-level written communication or mathematics courses. The placement test is recommended for all entering students. The test results must be on file with the Office of the Director of Admissions and Records before approval for registration is granted. It is the responsibility of the student to have the test results sent to this office. Information concerning ACT testing centers and test dates may be obtained from most high schools throughout the nation and from the American College Testing Program, Post Office Box 168, Iowa City, Iowa 52240. Only the ACT test is acceptable for placement purposes. (See also "Course Placement.")

### Immunization Policy

UAF requires the following to be supplied by all new students admitted for nine or more credits:

1. A completed health inventory form to be returned to, and kept on file with, the Center for Health and Counseling;
2. A report of negative tuberculin skin test or chest x-ray;
3. Written proof from a medical authority of immunity to:
  - a. Rubeola (measles)
  - b. Rubella
  - c. Diphtheria and Tetanus
  - d. Polio

Registration may be withheld for a student's second semester pending compliance with above.

## Undergraduate Admission Requirements in Brief

Admission Category	Admission Requirements
<b>BACCALAUREATE</b>	
<b>Freshman*</b>	High school graduation and GPA of 2.00 (C) Completion of 11 credit core with 2.00 (C) GPA
<b>Transfer Student — Less than 30 semester hours of credit*</b>	Same requirements as for freshman (above) 2.00 (C) GPA in previous college work
<b>Transfer Student — More than 30 semester hours of credit</b>	2.00 (C) GPA in previous college work
<b>ASSOCIATE</b>	
<b>Freshman and Transfer*</b>	High school graduation or 18 years of age or older
<b>Non-High School Graduate*</b>	GED or 18 years of age or older
<b>Non-Degree Student**</b>	High school graduation, GED or 18 years of age or older
<b>Auditor</b>	Same requirements as for appropriate category above (freshman, transfer, non-degree, etc.)
<b>International Student</b>	Same requirements as for appropriate category above (freshman, transfer, etc.) Acceptable TOEFL examination scores Acceptable financial statement

\*Prior to registration, all first-time degree and certificate students are required to complete the ACT test which is used for course placement purposes. The placement test is required for all students planning to take a 100-level written communication or mathematics course.

\*\*Non-degree students are normally limited to enrollment in no more than six credits per semester. Registration for more than six credits in a regular length semester will be allowed for enrollment in not more than two courses.

# Graduate Admissions

## Admission to Graduate Study

Graduate study seeks to prepare the student for advanced work. It aims to give the student deeper insights and better understanding of fundamental principles. The graduate program is shaped to the needs of the individual student and is developed in terms of his/her experience, academic background, and aspirations. Earning an advanced degree entails more than the satisfactory completion of specified courses; that student must show promise and performance in productive scholarship.

The Dean of the Graduate School oversees the administration and development of policies that govern graduate studies.

In general, students may be admitted to graduate status if they have a bachelor's degree from accredited institutions with at least a 3.0 (B) average in the major and if the major is deemed suitable for continuation of studies in the field 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, will be included in the calculation of the grade point average. Program heads in fields of interest will determine the adequacy of the student's preparation and whether or not departmental facilities are sufficient for the student's aims. (See also "Admission Requirements for Others — Foreign Students".)

Students are advised that permission to enroll in graduate courses does not imply admission to graduate study. Nor may a student presume that such coursework will necessarily be applicable to a graduate program. Admission to graduate study, when approved, does not imply admission to candidacy for a degree. Any program has the option of refusing to recommend a student for candidacy for a degree.

Soon after the student is accepted, a faculty advisory committee will be set up to assist the student in planning and carrying out his/her program. (See Degree Requirements — Graduate.)

## Master's Degrees

Master's degrees are offered in the humanities, social sciences, mathematics, physical and natural sciences, and professional areas such as engineering, education and business administration. Students wishing to enroll for graduate study in any of the available programs should obtain application for admission forms from the Office of Admissions and Records and follow the application procedures for graduate students.

In addition, approval of interdisciplinary programs leading to master's degrees may be possible in certain aspects of other areas or in combinations of disciplines, such as cross-cultural studies, arctic studies, linguistics, etc. A student interested in pursuing such a program should submit a proposal to the Dean of the Graduate School who will coordinate a review process involving an advisory committee of faculty members.

Several cross-discipline master's degrees are offered through cooperating departments. For example, the Master of Arts in Teaching is offered with emphasis in the following disciplines: biology, chemistry, English, geology, history, mathematics, music, and physics; the Master of Science in general science is offered in mathematics, physics, chemistry, biology, and geology. Students interested in obtaining more information about these degrees and their requirements should write to the Office of the Graduate School.

## Doctor of Philosophy Degrees

The University of Alaska Fairbanks offers Ph.D. programs in certain areas of mathematics, physics, geophysics, geology, biological sciences, oceanography, zoophysiology, zoology and wildlife and fisheries biology.

Prospective candidates in these or other subject areas should write to the Office of Admissions and Records for application materials. Each application is reviewed by a committee for admissions both in the light of the applicant's qualifications and the faculty and facilities available on the campus relevant to the field of projected study.

## Applying for Admission

### When to Apply

It is recommended that graduate students make application for admission at least six to nine months prior to the beginning of the semester in which they plan to enroll at UAF. Applications for admission should be submitted not later than August 1 for the fall semester and December 1 for the spring semester. Applications received after these dates will be processed if time permits and space is available.

A person cannot make reservations for on-campus housing until his/her application for admission has been accepted. Therefore, it is recommended that application for admission materials be filed at least six months prior to the date the applicant plans to enroll if he/she is interested in single student housing. For information about availability of married student housing contact the housing office.

### How to Apply — Read Carefully

Application forms may be obtained from the Office of Admissions and Records. Applications for admission will be considered only when the following credentials have been received by the Office of the Director of Admissions and Records:

- 1. Application for Admission** — A \$20 processing fee must accompany the completed application for admission form.
- 2. Scholastic Records** — An applicant is required to have complete official transcripts of all college credits sent to UAF in support of his/her application. The applicant is responsible for requesting that these transcripts be sent to the university but transcripts will not be accepted unless they are sent directly to the Director of Admissions and Records from the other college or university attended. The applicant may not submit personal copies of transcripts.
- 3. Letters of Recommendation** — At least three letters of recommendation are required from people capable of describing the applicant's character and his/her ability to undertake graduate study and research. The letters should be forwarded to the Director of Admissions and Records.
- 4. Those wishing to apply for admission into a Ph.D. program** must submit a description of their proposed graduate program and of professional goals which the program is intended to achieve. Those wishing to apply for an interdisciplinary M.S. or Ph.D. degree must submit a proposed graduate study plan and an outlined research proposal, with commitment from a UAF faculty member to serve on the student's advisory committee. Contact the Office of the Graduate School for interdisciplinary application procedures.
- 5. Results of the Graduate Record Examination (GRE) and/or other tests**, when required, must be forwarded to the Office of Admissions and Records. Applicants should refer to the list on the following page and to the admission requirements of the specific degree program for which they are applying to ascertain what tests, if any, are required.
- 6. Graduate foreign student applicants** also should refer to the admission requirements for foreign students.

## Conditional and Final Acceptance

After the required credentials are received, reviewed and processed, a statement of acceptance will be mailed to the qualified applicant. The statement of acceptance will contain the conditions under which the applicant has been admitted.

A qualified applicant can be accepted for admission while currently enrolled in his/her last semester of college. However, the acceptance may be conditional upon receipt of an official transcript 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 Director of Admissions and Records.

## GRADUATE DEGREE PROGRAMS OFFERED AT UAF

### Master of Arts (M.A.)

Anthropology  
Chemistry\*  
Community Psychology  
English\*  
Music

### Master of Arts in Teaching

(M.A.T.)

Biological Sciences\*  
Chemistry\*  
Geology  
History  
Mathematics\*  
Music  
Physics\*

### Master of Business Administration

(M.B.A.)

Business Administration\*\*

### Master of Civil Engineering

(M.C.E.)

Civil Engineering

### Master of Electrical Engineering

(M.E.E.)

Electrical Engineering

### Master of Education (M. Ed.)

College Student Personnel  
Administration  
Cross-Cultural Education  
Curriculum and Instruction  
Educational Leadership  
Guidance and Counseling  
Language and Literacy

### Master of Fine Arts (M.F.A.)

Creative Writing

### Master of Science (M.S.)

Arctic Engineering  
Atmospheric Sciences\*  
Biology\*  
Botany\*  
Chemistry\*  
Civil Engineering  
Computer Science  
Electrical Engineering  
Engineering Management  
Environmental Quality Engineering  
Environmental Quality Science  
Fisheries Science\*  
General Science\*  
Geological Engineering  
Geology\*  
Geophysics\*

Marine Biology\*  
Mathematics\*  
Mechanical Engineering  
Mineral Preparation Engineering  
Mining Engineering  
Natural Resources Management\*  
Oceanography\*  
Petroleum Engineering  
Physics\*  
Resource Economics\*  
Science Management  
Space Physics\*  
Wildlife Management\*  
Zoology\*

### Educational Specialist (Ed.S.)

Cross-Cultural Education  
Public School Administration

### Doctor of Philosophy (Ph.D.)

Atmospheric Sciences  
Biology (Interdisciplinary)  
Geology  
Geophysics  
Mathematics  
Oceanography  
Physics  
Space Physics  
Wildlife Management  
(Interdisciplinary)  
Zoology (Interdisciplinary)

In addition to the programs listed above, interdisciplinary master's and doctoral degree programs may be arranged in some specialized areas for which there are not established programs or programs may be arranged for specific plans of study involving a combination of disciplines. An applicant for admission to this program should contact the Office of the Graduate School for application information

\*GRE required

\*\*GMAT required



Canada geese head south shortly after the fall semester begins.

# Academic Regulations

Each student will be held responsible for the applicable University of Alaska Fairbanks rules and regulations.

## Academic Advising

UAF considers advising to be an integral part of the educational process; therefore, the objective of the advising program is to assist students in maximizing their responsibilities for their own academic program and in setting and achieving academic and postgraduate goals. Effective academic advising is perhaps the highest form of service that the individual faculty members can render to students and to UAF.

Degree and certificate candidates are required to have an academic advisor. Most of those students who have declared majors will be advised by the faculty in the department of the major. Undeclared students, those without majors, will be assigned advisors from the faculty at the UAF campus or unit where they are enrolled.

## Advising Center — Fairbanks Campus

Undeclared students at the Fairbanks campus will be advised through the Advising Center whose staff is made up of general advisors and faculty members from throughout the various disciplines. Since UAF recognizes the needs of students from different backgrounds, advisors will be available to assist transfer students, international students and rural students in addition to incoming freshmen and undeclared students. Although students are assigned to a specific advisor in the Advising Center, they have access to all members of the advising team and relevant department advisors.

Since UAF also recognizes that the key to a well-rounded education is the opportunity for exploration, the Advising Center, in cooperation with other departments, sponsors a myriad of informational workshops on such subjects as degree programs and career exploration as well as a wide range of social topics.

The goal of the Advising Center is to expedite the successful completion of a student's academic career.

## Academic Honor Code

All students who have enrolled in UAF will work in accordance with 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 each student. It is also the responsibility of each student to help maintain the integrity of the entire student community.

### The Honor Code

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 of a student from UAF.

Instructors shall 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 Vice Chancellor for Student Affairs whether the student should be dismissed from UAF. The UDHCC operates under procedures outlined in the "A" Book.

## Access to Records

Under the Family Educational Rights and Privacy Act of 1974, students are entitled to review their records. Except for directory information, no personally identifiable information will be 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 is disclosed to the public on a routine basis unless the student requests, 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. These forms must be completed each semester. No directory information will be released during the first five working days of each semester. After that time, such information will be released when appropriate, unless otherwise requested in writing. 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.

## Attendance

Regular attendance is expected in all classes. Unexcused absences may result in a student receiving a failing grade. It is the responsibility of the student to confer with the instructor concerning absences and to work out acceptable arrangements for making up missed work.

## Auditing

A student wishing to enroll in one or more courses for informational instruction only may register as an auditor as space permits. An auditor does not receive academic credit or have laboratory privileges and may not submit papers for grades and correction. Audited credit is not included in the computation of the study load for full-time, part-time determination or for overload status. At the instructor's discretion, an auditor not maintaining satisfactory attendance in class may be issued a "W" grade at the end of the semester. A person who has audited a class may not request credit via departmental (local) exams until the subsequent academic year.

## Change of Grade Policy

A grade, other than an incomplete or deferred, submitted by the instructor upon completion of a course, is assumed to be the student's final grade and it becomes part of the student's permanent record. A grade may not be changed unless a legitimate error has been made on the part of the instructor in calculating the grade and such a change must be approved by the instructor's unit head and dean. Corrections of grading errors must be made within 30 days after the beginning of the next regular semester.

## Class Standing

Class standing is determined on the basis of total credits earned. Students are classified as:

Freshman .....	0-29 credits
Sophomore .....	30-59 credits
Junior .....	60-89 credits
Senior .....	90 credits

Transfer students will be given class standing on the basis of 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.

## Credit by Examination

The credit by examination program is administered by the Testing Office at the Fairbanks campus. Examination is available through the College Level Examination Program (CLEP) and through locally arranged examinations. All exams may be repeated after an interval of one year. **Grades from credit by examination are not computed in the G.P.A.** In addition, credit by examination is not considered as UAF residence credit and is not considered as part of the semester study load for full-time, part-time classification.

### I. College Level Examination Program (CLEP)

#### A. CLEP General Examination

1. Only students currently enrolled at UAF or those students who have previously completed credit courses as part of a degree program at the university may be awarded credit.

2. Credit for CLEP General Examinations shall be awarded according to the following schedule:

- English — No credit for any score
- Mathematics — Three mathematics elective credits for 500 score
- Natural Science — Six natural science elective credits for 500 score
- Humanities — Six humanities elective credits for 500 score
- Social Science/History — Six social science elective credits for 500 score
- Maximum number of credits possible — 31

3. If as many as six semester credits have been earned in an area covered by a CLEP General Exam, no credit will be awarded for the successful completion of that exam.

#### B. CLEP Subject Examinations

1. Only students currently registered at UAF or those students who have previously completed credit courses as part of a degree program at the university may be awarded credit.

2. A course challenged for credit must not duplicate a course for which credit has already been granted or for which a student is currently enrolled.

3. Minimum passing scores of approved CLEP Subject Exams shall be 50. In the case of an essay, the appropriate department shall determine a grade based on the CLEP score plus the essay.

4. A person who has audited a class may not request credit by examination for that class until the subsequent year.

### II. Credit by Examination Through Local Exams

A. Only students currently registered at UAF will be awarded credit.

B. Subject to departmental approval, all courses, except those with course numbers ending -90 through -99 (193, 292, 497, etc.) and practicums, may be taken by examination. A list of courses not available for credit by examination is available in the Office of Testing Services.

C. A course challenged for credit must not duplicate a course for which credit has already been granted or for which a student is currently enrolled.

D. A person who has audited a class may not request credit by examination for that class until the subsequent year.

E. As part of the application process, the instructor and the student will mutually agree upon the topics to be covered, type and date of examination and the method of grading.

F. Examinations must be completed within 90 days of the application date. A student not meeting this deadline must reapply and pay an additional fee.

G. The credit by examination fee is not refundable.

H. English by Examinations: English 111, 211 (or 213), general education composition requirements, may be challenged through the English department under special circumstances. Information is available in the English department office.

## Credit for Prior Learning

Individuals learn a great deal outside the walls of educational institutions. Where this learning is relevant to college-level work or requirements and can be documented in terms of specific knowledge and/or skills, the university can be instrumental in accelerating the learning process through acknowledging, certifying and recording these experiences. Certain departments at UAF offer a program of credit for prior learning which will provide for the granting of from 1 to 45 credits which will substitute for specific courses used to fulfill associate and baccalaureate degree requirements. Participating departments will review credentials and make recommendations for the awarding of prior learning credits which substitute for specific courses.

For the associate of applied science degree and the bachelor of technology degree, from 1 to 60 block credits may be awarded based on federal, state or professional certifications or licenses. For further information concerning Credit for Prior Learning, contact the Advising Center at the Fairbanks campus.

## Credit-No-Credit Option

The Credit-No-Credit option encourages students to explore areas of interest not necessarily related to their academic majors.

One "free" elective may be taken under this option each semester. The instructor will not be informed of the student's status in the course. The student will be given credit toward graduation if he/she performs at a "C" level or above. If performance falls below that level, the course will not be recorded on the student's transcript. In either case, the course will not be included in any GPA calculations. If the student later changes his/her major and the course becomes a requirement, the course will be accepted by the new major department. The student may change from credit-no-credit status during the first two weeks of the semester by informing the Director of Admissions and Records of his/her desire to change status. (Students should check financial aid regulations before electing the credit-no-credit option.)

## Drop/Add

A student is expected to complete the courses in which he/she is enrolled. The student, however, may withdraw from a course until the end of the ninth week of the semester by following the Drop/Add procedure. After that time, student initiated withdrawals from individual courses will not be accepted. Students wishing to add courses to their schedules may do so until the end of late registration by following the Drop/Add procedure. Information about the procedure and forms may be obtained from the Office of Admissions and Records.

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

An undergraduate student who registers for 12 or more semester credits at UAF is classified as a full-time student; a graduate student registered for nine or more credits at UAF is considered as full-time. In order to complete an undergraduate program in four years, a student will have to carry 16 or 17 credits each semester. One may enroll in up to 18 credits per semester without special permission. For enrollment in 19 or 20 credits, the approval of the dean of the college in which the student is majoring must be obtained. For enrollment in 21 or more credits in any one semester, the student must submit a petition for approval to the Office of Admissions and Records.

Credits carried at any unit of UAF are considered in the determination of study load hours and for full-time or part-time classification. Courses that are audited, carried by correspondence, taken for credit by examination are not included in the study load computation.

## Grade Point Average (GPA) Computation/Grading System

For the computation of a GPA, the number of UAF credits attempted is divided into the number of grade points earned. To determine the number of grade points earned, the credits attempted for each semester are multiplied by a grade point factor based on the grades awarded. Credits attempted where grades of AU (audit), CR (credit), DF (deferred), ENR (enrolled), I (incomplete), P (pass), S (satisfactory) or W (withdrawn) have been awarded are not included in the GPA computation. In addition, 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. When one completes a bachelor's degree, the GPA in future work is calculated only on the credits and grades earned since the bachelor's degree was awarded. An exception to this is made if the student is officially admitted to a second bachelor's degree program.

All grades (original and retakes) for a course completed at UAF will be shown on the permanent record but only the last grade achieved at UAF for a course will be computed in the GPA unless the course is designated as one that can be repeated for credit. For scholastic standing calculations for graduate students, the GPA includes all courses identified on the student's advancement to candidacy form (including repeats). For those graduate students who have not been advanced to candidacy, the GPA includes all courses (including repeats) taken since admission to graduate study.

Grades in all courses 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. The use of pluses or minuses in grading rests with the instructor of each course. The symbols are advisory information only and carry no numeric

weight in computation of the grade point average. If used, the pluses and minuses will appear on grade reports and official transcripts of academic history. All instructors are expected to state their grading policies in writing at the beginning of each course.

Grades appearing on academic records are as follows with grade point factors in parenthesis:

**A (including +/-)**

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 (four grade points per credit).

**B (including +/-)**

Indicates outstanding ability above the average level of performance (three grade points per credit).

**C (including +/-)**

Indicates a satisfactory or average level of performance (two grade points per credit).

**D (including +/-)**

The lowest passing grade, indicates work of below average quality and performance (one grade point per credit).

**F (including +/-)**

Indicates failure (no grade points). All "F" grades, including those earned in pass/fail courses, are included in the GPA calculations.

**P Pass** — The grade "pass" indicates satisfactory completion of course requirements at either the undergraduate or graduate level. A "pass" grade does not affect the grade point average but credits earned with "pass" grades may apply toward meeting degree requirements and may be used as a measure of satisfactory progress. Satisfactory performance is the equivalent of a grade "C" or better in undergraduate coursework and "B" or better in graduate courses.

**S Satisfactory** — Used only to indicate satisfactory final completion of graduate theses.

**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 such courses as theses, special projects, etc., that require more than one semester to complete.

**AU Audit** — A registration status indicating that the student has enrolled for informational instruction only (no academic credit).

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

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

**I Incomplete** — A temporary grade used to indicate that the student has satisfactorily completed (C or better) the majority of the work in a course, but for personal reasons beyond the student's control has not been able to complete the course during the regular semester. Normally, an incomplete is assigned when the student is in the class until at least the last three weeks of the semester or summer session. Negligence or indifference are not acceptable reasons for an "I" grade.

An incomplete must be made up within one year or it will automatically be changed to an "F" grade. The "I" grade is not computed in the student's 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." A senior 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.

(See also "Course Credit.")

## Honors Lists — Undergraduate Students

The Dean's List — To be eligible for the Dean's List, a student must be an undergraduate enrolled in at least 12 UAF credits graded with letter grades and must have earned a minimum GPA of 3.5 for the semester in UAF courses.

The Chancellor's List — To be eligible for the Chancellor's List, a student must be an undergraduate enrolled in at least 12 UAF credits graded with letter grades and must have earned a GPA of 4.00 in UAF courses.

The Chancellor's List and Dean's List awards will be posted on the permanent student records.

## Majors — Undergraduate Students

A qualified undergraduate student may declare a major when he/she is officially admitted to UAF. Any degree student who does not

follow a curriculum leading to a specific degree will be enrolled with an "undeclared" major. A student with an interest in a particular school or college, but who has not selected a major, will be enrolled as a non-major within that division. Non-degree students are not eligible to declare a major or to be assigned class standing.

A student may change a major only at the beginning of a semester. A Change of Department and/or Major form, which may be obtained at the Office of Admissions and Records, must be completed and the student must obtain the written consent of the heads of the departments concerned.

Associate degree or certificate students wishing to declare baccalaureate degree majors must complete the admission process for bachelor's degree programs. (See "Undergraduate Admissions.")

## Majors — Graduate Students

One may have graduate standing only when formally admitted to a specific major or accepted in an approved interdisciplinary program. Declaration of major is made at the time the graduate application for admission is accepted.

A graduate student wishing to change the area of emphasis of his/her degree program, must secure approval by completing a "Graduate Change of Major and/or Degree Program" form which may be obtained at the Graduate School Office. A graduate student wishing to change to a different program in another department, division, school or college, must submit a new graduate application for admission so that the applicant's credentials may be fully reviewed by the faculty responsible for that degree program.

## Registration

Persons enrolling at UAF must complete registration according to the prescribed procedure and must pay required UAF fees in order to be eligible to attend classes and earn credit. A registration period is held at the beginning of each regular session on dates published in the official university calendar. Registration for special programs, short courses, seminars, and other classes that are not part of the regular academic calendar will be arranged prior to their starting. (See also "Registration Requirements for Graduate Students.")

## Registration Drop Policy

A student is expected to begin attending classes on the first day of instruction. In order to identify potentially available spaces in courses which have reached enrollment limits, departments may require that a student attend the first class session or notify the department in advance that he/she is unable to attend the first class. If the student misses the first class without notifying the department, the student may be dropped from the course and the space assigned to a student on the waiting list.

At the Fairbanks campus, a department wishing to use this option, will notify the Office of Admissions and Records at the time the class schedule is prepared so that appropriate notice can be included in the schedule. After the first class session, lists of the names of the students who are to be dropped from classes will be forwarded by the department head to the Office of Admissions and Records so the course can be removed from the students' enrollment files as soon as possible.

Because of enrollment pressures, it is English department policy to drop from the class roll students who fail to attend the first two meetings of a composition course (Engl. 100, 111, 211, 213, 313, and 414), even if they have preregistered. In addition, it is policy in the Department of Speech and Drama to drop from the class roll students who fail to attend the first two meetings of a basic course (Sp.C. 121, 131, and 141) even if they have preregistered.

Should space become available in a class from which a student has been dropped by the department, the student will have to complete the regular drop/add procedure to add the course.

## Reserving Courses for Graduate Programs

A senior student at UAF who has only a few remaining requirements for his/her bachelor's degree 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, a student must be in his/her 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 the bachelor's degree. (Reserving these courses, however, does not assure that they will be accepted by a graduate advisory committee as part of the student's eventual graduate program.)

## Scholastic Progress

Midterm grade reports are optional for each campus of UAF. When used, they are required for all freshmen with a grade of less than C. It is the instructor's responsibility to assure that all students are aware of the grading policy for their course and that homework, exams, etc. are returned in a timely manner so that students know their class performance.

## Scholastic Standards Undergraduate Students

UAF has set scholastic standards so undergraduate students earning less than satisfactory grades will examine their objectives carefully before continuing. The scholastic standards are designed so that action is taken before a student's record deteriorates to the point that readmission to UAF or to another college or university becomes a problem. In all cases involving poor scholarship, students are encouraged to consult with their advisers, instructors or deans.

At the end of a semester, an undergraduate student failing to earn a GPA of 2.00 in courses at UAF will be subject to scholastic action. Depending upon the circumstances, scholastic action may result in a student being placed on probation, continued on probation or disqualified from the university.

**Probation** — Academic probation will occur when an undergraduate degree student or a full-time non-degree student's cumulative or semester grade point average falls below 2.00. A student previously on probation whose semester and/or cumulative GPA is less than 2.00 may be continued on probation if circumstances warrant. The probation determination, which is made by the dean of the college in which the student is majoring, may include conditions and/or credit limitations which the student is expected to fulfill during his/her next enrollment at UAF. Probation students may be referred for developmental advising/education and/or to a counseling center. In order to be removed from probation, a student's cumulative and semester GPAs must be 2.00 or higher. Academic probation will be noted on a student's UAF transcript. — **Academic Disqualification** — If a student's cumulative record indicates poor scholarship, the dean of the college in which the student is majoring may recommend that the student be disqualified from UAF. A student who is academically disqualified is not permitted to enroll in credit courses at UAF for the next regular semester following disqualification. After one regular semester, a student may enroll at UAF as a special student, limited to six credits or less per semester for any remainder of the disqualification period. A student under academic disqualification must reapply for admission to UAF when he/she wishes to be considered for readmission as a regular student. The application for readmission should include evidence that the student now has a high probability for success in college.

**Good Standing** — To be in good standing, an undergraduate UAF student must maintain an overall and most recent semester GPA of 2.00 or better.

## Scholastic Standards Graduate Students

Graduate students will be permitted to continue graduate study from semester to semester only if their performance is satisfactory as judged by each student's advisory committee and dean. Minimally, a cumulative grade point average of 3.00 (B) in the courses identified on their advancement to candidacy form is required for good standing. For those students who have not been advanced to candidacy, a minimum cumulative grade point average of 3.00 is required in all courses taken since admission to graduate study.

Upon the recommendation of either the dean or the student's advisory committee, a student may be disqualified from graduate study when his/her performance is deemed unsatisfactory.

## Veterans' Training

The university is approved for veterans' training and UAF will be held responsible for overpayments made to students receiving VA educational benefits when such overpayments result from excessive absences, discontinuance or interruption of courses by veterans, or by a veteran not meeting the academic standards of progress of the university. Therefore, UAF instructors will notify the Veterans' coordinator when a veteran is not attending or irregularly attending class or is not meeting the minimum UAF academic standards in their classes.

UAF will report to the VA any veteran receiving VA educational benefits who is not maintaining a semester or cumulative GPA of 2.00 or above (3.00 for a veteran in graduate studies). Failure to maintain the required GPA may result in the suspension of VA benefits.

UAF does not have a Veterans' Affairs Office on campus. However, a counselor visits the campus regularly during the year. Veterans interested in further information about educational benefits should contact the Fairbanks campus Office of Admissions and Records.

## Withdrawal

After the end of the ninth week of the semester, withdrawals from individual courses will not be accepted.

Total withdrawal from UAF after the ninth week must be initiated by the dean of the college/school in which the student is majoring or the Vice Chancellor for Student Affairs for undeclared students. Total withdrawal forms must be obtained from the Student Affairs office.

The dean initiating the withdrawal will immediately notify the course instructors and the student's adviser of the withdrawal.

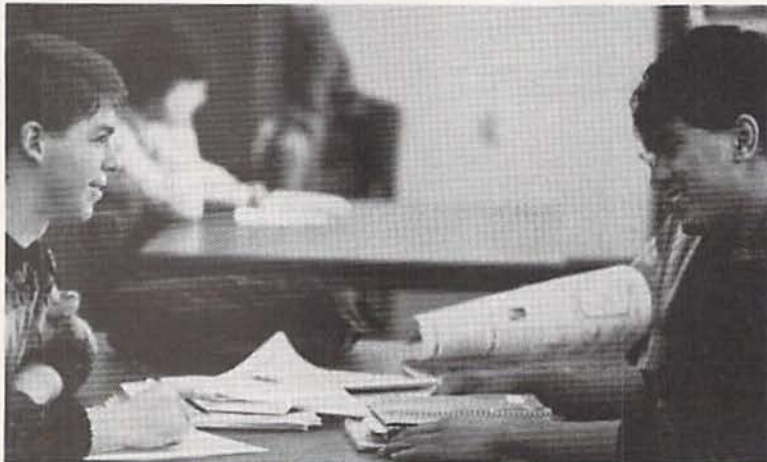
Withdrawal from UAF is the official discontinuance of attendance prior to the end of the semester or session.

Withdrawals after the second week, regardless of the type, will appear on the student's permanent record as the letter "W" but will have no effect on the student's GPA nor any reference to the student's standing in the class.

All withdrawals must be acknowledged by the student in writing.

The above withdrawal policy deadline will be adjusted for courses shorter in time than the regular semester.

The appeals route for students or faculty regarding the dean's decision is the Vice Chancellor for Academic Affairs, and then the Chancellor.



Tim McIntosh, (left) a sophomore from Fairbanks, studies in the all-hours study room of the library with Ken Alcain.

# Degree Requirements

To receive a degree from the University of Alaska Fairbanks, a student 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; requirements of the major are given in the Degree Programs section.

## General University Requirements

**Undergraduate** — The minimum number of credits which must be earned, including those accepted by transfer, is 60 semester hours for an associate degree and a minimum of 120 semester hours for any bachelor's degree awarded at UAF.

At least 15 of the final 30 semester hours for any associate degree must be earned at UAF. For a bachelor's degree, a student must earn in residence at UAF at least 24 credits in upper-division courses and at least 30 of the last 36 credits for the degree. Transfer students will ordinarily be required to earn at UAF a minimum of 12 semester credits in each major field and a minimum of three semester credits in each minor field for the baccalaureate degree. Credit by examination does not qualify for residence credit.

A minimum GPA of 2.00 (C) must be attained in all work as well as in the major and minor fields. In addition, a minimum grade of "C" must be earned in the courses required for the major.

A UAF graduate wishing to obtain a second bachelor's degree must complete a minimum of 24 hours of credit beyond the first bachelor's degree. All general university requirements, degree requirements, and requirements of the major must be met for both degrees.

A student who holds a bachelor's degree from a college or university other than UAF must apply for admission as a transfer student. All general university requirements, including residency requirements, degree requirements, and requirements of the major must be met.

**Graduate** — A graduate student must have applied and been admitted to a specific degree program and, in addition, must later be admitted to candidacy for that degree and discipline major.

The catalog of record for a graduate student shall be either the catalog in effect at the time of graduation or the catalog in effect during the first semester of enrollment after formal admission to a graduate program, provided that the student shall have been continuously enrolled and provided that the maximum time limits on coursework and completion of the degree shall not be exceeded.

All graduate students must register for a minimum of 3 credits or extend registration each semester (excluding summer semester) in which he/she is actively working toward a degree.

Only graduate students who are actively working toward a degree but are not in residence and do not use university facilities may "extend registration."

Credits earned while a special student or a student without class standing may be applied toward a graduate degree only with approval of the student's advisory committee to a maximum of 1/2 of all credits used to meet the degree requirements.

Credit by correspondence or examination or courses taken under the credit-no credit option may not be used in fulfilling the basic course requirements of the degree program.

A cumulative GPA of 3.00 (B) is required for good standing. An "A" or "B" grade must be earned in courses not primarily for graduate students (300 or 400); "C" will be accepted in graduate courses (500 or 600), provided the student maintains a "B" average both for all graduate courses and for 600-level courses. For the purposes of graduate study (good standing and meeting degree requirements), all grades, including those generated from retaking a course, will be included in the GPA.

A graduate student must satisfactorily pass a final examination(s) according to the requirements for his/her degree.

Additional requirements and specific details concerning graduate degrees will be found in the Graduate Manual. Copies can be obtained from the Office of the Graduate School.

## Residence Credit

Residence credit is defined as UAF credit that is earned by a student in formal classroom instruction or in individual study or research through any unit of UAF. Transfer credit, advanced placement credit, formal service school credit, military service credit and credit granted

through nationally prepared examinations are not considered residence credit. Credit by examination earned through locally prepared tests is not normally considered residence credit.

## Degree Requirements Undergraduate

A maximum of 15 semester hours of work completed by correspondence may be accepted toward an associate degree and 32 semester hours may be accepted toward a bachelor's degree. Students wishing to use credits from correspondence courses toward degree requirements must obtain approval of courses by the dean of the school or college from which they expect to graduate. Students not receiving prior approval for such courses take the risk of not having the courses accepted.

Since English 211 and 213 are primarily courses in writing, either will satisfy the second half of the requirement in written communication for the bachelor's degree. Students may not enroll in English 211 or 213 without having fulfilled the English 111 requirement in one of the following ways: complete the course with a passing grade; challenge the course successfully; earn an English ACT score of 26 or higher; present a CEEB APT score in English of 3 or higher.

## Associate Degrees

The associate degree is awarded upon the successful completion of a prescribed two-year program. The degree has its own integrity and for many people it will be their most advanced formal education experience. For others, it will be the first undergraduate degree and a stepping stone to a baccalaureate program.

### ASSOCIATE OF ARTS REQUIREMENTS

The Associate of Arts degree is intended to provide students with a basis of general education in order to undertake baccalaureate degree work and is non-specific in intent. A student may earn only one A.A. degree.

	Credits
Written Communication .....	6
(Engl. 111 plus Engl. 211 or 213)	
Oral Communication .....	3
Humanities Electives .....	9
Social Science Electives .....	9
Mathematics and/or Natural Science Electives .....	9
Applied Studies Electives .....	9
General Electives .....	15
Total .....	60

Of the total 60 credits, all must be at the 100 level or above and 20 credits must be at the 200 level.

### Course Classifications — Associate Degree Program

#### Humanities:

Art	Dance
English	History*
Humanities	Journalism
Languages	Linguistics
Literature	Music
Philosophy	Photography
Religion	Speech and Public
Theater	Communication

#### Social Sciences:

Anthropology	Behavioral Science
Business Law	Counseling
Economics	Geography
History*	Political Science
Psychology	Sociology

\*History may be applied to either Social Science or Humanities for the associate degree, but not both. It counts only as a social science for the baccalaureate degree.

#### Mathematics and Logic:

All mathematics, statistics and logic courses.



**Natural Sciences:**

Biology, Biological Science  
Geology  
Physical Geography  
Physics

Chemistry  
Physical Anthropology  
Physical Sciences

**Applied Studies**

Accounting  
Airframe and Powerplant  
Aviation  
Computer Applications  
Counseling  
Diesel/Heavy Equipment  
Early Childhood Development  
Electronics  
Fire Science  
Home Economics  
Library Science  
Mechanics  
Military Science  
Nursing/Health Science  
Office Occupations  
Petroleum  
Public Safety\*\*  
Waste Water Technology

Agriculture  
Alaskan Studies  
Business Administration  
Construction  
Culinary Arts  
Drafting Technology  
Education  
Emergency Medical Training  
Fisheries/Wildlife Mgmt  
Justice  
Management  
Meteorology  
Mining  
Nutrition  
Personal Development  
Phys. Educ./Recreation  
Trade and Technology  
Welding

\*\*Includes Corrections, Fire Science, Justice, Law and Police Administration.

**ASSOCIATE OF APPLIED SCIENCE REQUIREMENTS**

The Associate of Applied Science degree is awarded in a specific occupational field of study with emphasis on entry into a job market. This degree, usually seen as a terminal degree, can serve as the basis for additional training.

	Credits
Written Communication ..... (Engl. 111 required)	6
Oral Communication .....	3
Select a total of 6 credits from the following areas: Humanities or Social Science or Mathematics or Natural Science .....	6
Major Specialty.....	at least 30
Electives to total.....	60

*Majors Available for A.A.S. Degree:* Airframe and Powerplant, Applied Accounting, Applied Business, Aviation, Community Health Practitioner, Culinary Arts, Early Childhood Development, Early Childhood Education, Financial Institutions Management, Office Professions, Paraprofessional Counseling, Public Safety-Fire Science. Temporarily suspended are A.A.S. degree programs in Drafting Technology, Electronic Technology, Petroleum Technology, Public Safety-Justice, Resource Information Technology and Yupik Language.

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

**Baccalaureate Degrees****BACHELOR OF ARTS REQUIREMENTS**

<b>Communication:</b>	Credits
English 111 or equivalent, and English 211 or 213†.....	6
Speech Communication .....	3

**Humanities:†**

Any combination of courses at the 100 level or above, selected from at least 3 disciplines exclusive of major/minor, with a maximum of 9 credits from any one discipline..... 18

**Social Sciences:**

Any combination of courses at the 100 level or above, selected from at least 3 disciplines exclusive of major/minor, with a maximum of 9 credits from any one discipline..... 18

**Mathematics and Logic:**

Any combination of courses at the 100 level or above from the Department of Mathematical Sciences (Mathematics, Computer Science and Applied Statistics), or Philosophy 204 ..... 6

**Natural Sciences:**

Any combination of courses at the 100 level or above which includes at least one laboratory course..... 7

**Major Complex\*** ..... At least 30\*\*

**Minor Complex\*** ..... At least 12\*\*

†Neither English 313 or 314 will fulfill the second half of the written communication requirement or the humanities distribution requirement

**Minimum credits required for degree** ..... 120\*\*\*

Of the above, at least 48 credits must be obtained in the upper division (300 level or higher) courses.

\*Courses specified by a major or minor complex which are not in the primary discipline of that complex may be used to fulfill the Humanities, Social Sciences, Mathematics and Logic, or Natural Sciences distribution requirements.

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

\*\*\*Most degree programs require 130 credits. See specific requirements listed in Degree Programs section of this catalog.

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

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

*Minors Available for B.A. Degree:* Accounting, Alaska Native Languages, Alaska Native Studies, Athletic Coaching, Citizens' Law, Computer Information Systems, Computer Science, Anthropology, Art, Asian Studies, Biological Sciences, Business Administration, Chemistry, Economics, Secondary Education, Elementary Education, English, Eskimo, French, Geography, Geology, German, History, Humanities, Human Services, Japanese, Journalism, Justice, Linguistics, Mathematics, Military Science, Music, Philosophy, Physics, Physical Education, Political Science, Psychology, Russian, Russian Studies, Sociology, Spanish, Speech Communications, Statistics, Theater, Travel Industry Management.

The following associate degree programs are approved as minors for the bachelor of arts degree: Air Traffic Control, Applied Business, Chemical Science, Early Childhood Development, Electronics Technology, Fire Science, Food Technology, Justice, Library Technical Assistant, Petroleum Technology, Office Occupations, Paraprofessional Counseling, and Professional Piloting.

**Double Major** — A Bachelor of Arts degree candidate may complete two majors rather than a major and a minor. The majors must be selected from those approved for the Bachelor of Arts degree and all general requirements plus all requirements for both majors must be completed. If one major is from a program where 120 total credits are required and the other major is from a program where 130 credits are required, the student will be expected to complete 130 credits. The student completing a double major must officially declare both majors either at the time of admission and/or through the change of major procedure. The student will be expected to follow the degree requirements as listed in the catalog in effect at the time the first major is officially declared or from the catalog in effect the year of graduation.

**Double Degrees** — A student wishing to complete more than one bachelor's degree at UAF must complete all general requirements as well as all major, and minor, if any, requirements for all degrees. A minimum of 24 semester hours of credit beyond the total required for the first degree must be earned before any additional degrees can be awarded. The student may use the catalogs in effect at the time majors are officially declared or the catalogs in effect at the time of graduation. In other words, for two degrees that are completed at the same time, a student may be following requirements from two different catalogs.

**BACHELOR OF SCIENCE REQUIREMENTS**

Credits

**Communications**

English 111 or equivalent and	
English 211 or 213†.....	6
Speech Communication .....	3

**Mathematics**

One semester of college-level Calculus, Math. 203, or Applied Statistics 301 ..... 3 or more

**Natural Science**

Chemistry, Biology, Geoscience (Solid Earth Sciences), or Physics (minimum of 6 credits each in two disciplines), including 2 credits of laboratory ..... 16

**Social Science/Humanities†**

Social Science (minimum of 3 credits) and Humanities (minimum of 3 credits), exclusive of 9-credit communications requirement..... 15

**Major Complex** (see departmental curricula for specific requirements and for Minor Complex, if required)..... at least 30\*

**Minimum credits required for degrees**..... 120\*\*

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

\*\*Most degree programs require 130 or more credits. See specific requirements listed in Degree Programs sections of the catalog.

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

(Requirements of majors listed in the Degree Programs section of this catalog.)

**Double Major** — A Bachelor of Science degree candidate may complete a double major instead of a single major. The majors must be selected from those approved for the Bachelor of Science degree and all general requirements plus all requirements for both majors must be completed. The student completing a double major must officially declare both majors either at the time of admission and/or through the change of major procedure. The student will be expected to follow the degree requirements as listed in the catalog in effect at the time the first major is officially declared or from the catalog in effect the year of graduation.

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

1. The minor must be declared before the beginning of the student's final semester in the B.S. degree program.
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. The catalog used for the minor must be the same as used for the major and general degree requirements.
3. Requirements for the minor must be satisfactorily completed before the B.S. degree is awarded. The minor then will be listed on the student's permanent academic record along with the recording of the B.S. degree.

#### BACHELOR OF TECHNOLOGY REQUIREMENTS Credits

\*Must have completed an associate degree in a technical specialty (Associate of Technology, Associate of Applied Science). Students holding associate degrees of less technical depth (Associate of Arts) must make up the equivalent technical deficiencies before being admitted to the Bachelor of Technology degree program...60 or more

**Communication** (may have been taken as part of the associate degree):  
Engl. 111 and Engl. 211 or 213†..... 6  
Oral Communication..... 3

**General Education** (courses taken as part of the associate program are acceptable):

12 credits in one area, 6 credits in a second area and 3 credits in each of the two other areas: Social Sciences, Humanities, Natural Science, Mathematical Science (Mathematics, Computer Science, Statistics)†..... 24

**Major Complex** (must be beyond associate degree major, 30 credits):  
Upper-division credits in technical specialty ..... 0-12  
Complementary area..... 24-30  
**Minimum credits required for degree** ..... 130

A minimum of 65 credits must be earned beyond those applied to the associate degree. Twenty-four upper division credits must be earned at UAF. All credits must be 100-level or above.

Major Complex Available for the B.T. Degree: Education.

The following technical specialties have been approved as acceptable associate degree programs for admission to the Bachelor of Technology degree program in Education:

Aviation Technology      Food Service Technology  
Electronics Technology

#### BACHELOR OF BUSINESS ADMINISTRATION REQUIREMENTS

Communications	Credits
Engl. 111 .....	3
Engl. 211 or 213†.....	3
Sp.C. Elective.....	3

Social Science	Credits
Psy. 101 or Soc. 101 .....	3
P.S. 101 or 102 — Intro. to American Government .....	3
Econ. 201 and 202.....	6
History elective.....	3
Social Science elective .....	3

Natural Science & Mathematics	Credits
Natural Science elective (including 1 cr. of lab).....	4
Math. 161 and 162 .....	7

Humanities	Credits
Humanities elective†.....	6

(In addition to 3 credits of speech elective taken under "Communications" above)

**Major Complex and Common Body of Knowledge**  
See department curricula for specific requirements.

**Minimum Credits Required for Degree**..... 120\*\*

\*\*Most degree programs require 130 credits. See specific requirements listed in Degree Programs section of the catalog.

**Majors Available for B.B.A. Degree:** Accounting, Economics, Business Administration (Finance, International Business, Management, Marketing, Travel Industry Management).

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

#### BACHELOR OF EDUCATION REQUIREMENTS

See under Education in Degree Programs section.

#### BACHELOR OF MUSIC REQUIREMENTS

See under Music in Degree Programs section.

#### BACHELOR OF FINE ARTS REQUIREMENTS

B.F.A. general requirements are the same as the requirements for the B.A.

Major Available for B.F.A. Degree: Art.

#### Course Classification Identification

Courses that may be used in satisfying general degree requirements (e.g., Social Science Elective, Written Communication, etc.) are identified in the course description publication by the following designators:

h - Humanities	o - Oral Communication
m - Mathematics	s - Social Science
n - Natural Science	w - Written Communication

For example, Hist. 341, History of Alaska, (3+0)s, may be utilized to satisfy the "social science elective" requirement. Engl. 111, Methods of Written Communication, (3+0)w, may be used to meet the written communication general degree requirement.

#### Academic Petition

Any deviation from academic requirements and regulations for undergraduate students must be approved by academic petition. A petition form, which requires the signatures of the student's adviser, unit head, and dean, may be obtained from the Office of Admissions and Records.

Petitions to waive general university or degree requirements must be approved by the Vice Chancellor for Academic Affairs. Such petitions first must be submitted to the Office of Admissions and Records.

#### Degree Requirements — Graduate

Specific requirements and procedures for graduate study are listed below and in the Graduate Manual, which can be obtained from the Office of the Graduate School.

#### Master's Degree

The minimum number of credits which must be earned for every master's degree is 30 semester hours.

A maximum of 12 credits may be devoted to thesis or to research, or a maximum of six to research in non-thesis degrees. At least 24 credits

in any master's program, including thesis and research, must be at the 600 level.

A maximum of nine semester hours of credit from another institution may be transferred to UAF and applied toward a master's degree upon approval of the student's advisory committee and the dean of the college or school in which the student is enrolled.

A student may apply for admission to candidacy for a specific master's degree if he/she is in good standing and has satisfied the following requirements: the student must have (1) satisfactorily completed at least eight credits of graduate study at UAF; (2) received approval for the provisional thesis title if a thesis is required, and (3) received approval of the finalized Graduate Study Plan.

The candidate must pass a comprehensive/final examination, either written or oral; if a thesis is required, an oral defense of the thesis must be taken either in conjunction with or in addition to, the comprehensive/final examination. The examining committee shall consist of at least a candidate's advisory committee and, in the case of an oral exam, an examiner from outside the candidate's college, school or division, representing the Office of the Chancellor.

All work toward the fulfillment of the requirements of a master's degree must be completed within seven years. All courses listed on the student's program must be satisfactorily completed.

### Master of Arts in Teaching

The master of arts in teaching program is designed to serve baccalaureate graduates who qualify for the Alaska secondary school certificate, who intend to make secondary school classroom teaching their career and who wish to take additional work in their teaching major and/or minor as well as in Education.

NOTE: Students will enroll in a department or program which offers an approved M.A.T. program. See "Approved Programs" below.

### Admission Requirements:

1. A bachelor's degree and a teaching credential.
2. A grade point average of at least 3.00 in the baccalaureate major, teaching major, and in education courses.
3. Submission of the following to the Director of Admissions and Records:
  - a. A completed university Application of Admission to Graduate Study.
  - b. A statement of goals to which the M.A.T. will contribute.
  - c. Official transcripts of all previous college or university work.
  - d. At least three letters of reference.
4. Additional evaluative material may be required by some departments: e.g.,
  - a. Scores from the aptitude test of the Graduate Record Examination and/or scores from the advanced tests in the field of the baccalaureate major.
  - b. An interview.
5. Recommendation for admission by the dean of the college or school in which the subject matter discipline is located.

### Degree Requirements:

1. Complete general university requirements and master's degree requirements.
2. Complete 36 credits, of which at least 24 credits, including research, must be at the 600 level.

#### Required Courses:

	Credits
Ed. 601—Critique of Educational Research Methods.....	3
Ed. 612—Cultural and Phil. Foundations of Education.....	3
Other required courses to be specified by student's graduate committee and may vary depending on the particular field of study. Some departments may have additional requirements.	

3. Each candidate must pass a written comprehensive examination. The examining committee shall consist of the student's advisory committee. There is no thesis requirement for the M.A.T. degree.

### Approved Programs:

The M.A.T. degree at UAF has been approved for the following subject matter areas: biology, chemistry, geosciences, history, mathematics, music and physics. Students wishing to study toward the

M.A.T. degree in areas not previously approved may apply for admission under the university's interdisciplinary (individual attention) program.

### Educational Specialist Degree

The minimum number of credits which must be earned beyond the master's degree is 36 semester hours, 30 of which must be 600 level.

A maximum of nine hours of credit may be accepted by transfer, with approval of the student's graduate committee and the Dean of the College of Human and Rural Development.

The student may apply for advancement to candidacy, provided he/she is in good standing and has (1) satisfactorily completed a minimum of nine credits of his/her program at UAF and (2) received approval of the finalized Graduate Study Plan.

The student must complete a six-credit-hour internship or field study and must pass a written and oral comprehensive examination.

All work toward the fulfillment of the requirements for the educational specialist degree must be completed within seven years after first registering for the program.

### Doctor of Philosophy Degree

The degree of doctor of philosophy is granted for proven ability and scholarly attainment. There are no fixed credit requirements for this degree at UAF. It is not policy to confer this degree upon anyone whose entire academic experience has been at this university.

Students choose a major line of study and, with the advice of their advisory committee, such lines of study in related fields as are necessary to achieve a thorough and scholarly knowledge of their subject. The committee and the student will prepare the student's graduate study plan for the degree which, including applicable and acceptable work transferred from other institutions, shall represent approximately three full years of study beyond the bachelor's degree.

UAF requires completion of a foreign language/research tool requirement set by the candidate's advisory committee. Refer to the Graduate Manual for details. The selection and administration of suitable proficiency tests will be under the direction of the student's graduate committee.

Admission to graduate study does not imply admission to candidacy for a degree. The student should seek admission to candidacy approximately one year before completing the requirements for the doctorate. A student may be accepted as a candidate by the advisory committee after (1) completing the full-time equivalent of two academic years of graduate study, (2) completing at least one semester in residence at UAF, (3) finalizing the graduate study plan, (4) passing the foreign language/research tool requirement, (5) obtaining approval by the advisory committee of the title and synopsis of the thesis, and (6) passing a written comprehensive examination administered on a departmental basis.

The thesis, which is required for the Ph.D. degree, is expected to represent the equivalent of at least one full academic year's work at UAF and must be a substantial contribution to knowledge. All Ph.D. students must complete 18 thesis credits.

After submitting the thesis, the candidate must pass an oral examination supporting the thesis. The examining committee will consist of the student's advisory committee supplemented by additional examiners, including one from outside the candidate's college, school or division, representing the Office of the Chancellor.

All work toward the fulfillment of a doctoral degree must be completed within 10 years.

**Thesis**—For information regarding thesis preparation and submission, see the Graduate Manual. All work done and all specimens collected in connection with the preparation of the thesis are the property of the university and the agency financing the work. That material which is the property of the university can be released with the permission of the head of the department and the dean after it has been reproduced by the university.

# BACCALAUREATE DEGREE REQUIREMENTS IN BRIEF

ACADEMIC DISCIPLINE	Bachelor of Arts	Bachelor of Science	Bachelor of Bus. Admin.	Bachelor of Education	Bachelor of Music	Bachelor of Technology	ACADEMIC DISCIPLINE
Written Communication	Engl 111 - 3 cr Engl 211 or 213 - 3 cr	Engl 111 - 3 cr Engl 211 or 213 - 3 cr	Engl 111 - 3 cr Engl 211 or 213 - 3 cr	Engl 111 - 3 cr Engl 211 or 213 - 3 cr	Engl 111 - 3 cr Engl 211 or 213 - 3 cr	Engl 111 - 3 cr Engl 211 or 213 - 3 cr	Written Communication
Oral Communication	Sp.C. elective - 3 cr	Sp.C. elective - 3 cr	Sp.C. elective - 3 cr	Sp.C. elective - 3 cr	Sp.C. elective - 3 cr	Sp.C. elective - 3 cr	Oral Communication
Humanities	18 credits in any combination of courses at the 100 level or above selected from at least 3 disciplines with a maximum of 9 credits from any one discipline in both humanities and social science areas - 36 cr	15 credits including at least 3 credits from each area	Electives - 6 cr	Electives - 9 cr Ling. 101 or ANL 215 or 216 - 3 cr	Non-Music elect - 15 cr	Gen. Educ. - 24 cr  (12 cr in one area, 6 cr in 2nd area, and 3 cr in each of other two areas)	Humanities
Social Science			History - 3 cr Psy 101 or Soc 101 - 3 cr P.S. 101 or 102 - 3 cr Econ 201, 202 - 6 cr Electives - 3 cr	Anth. 242 - 3 cr Hist. 131 or 132 - 3 cr Hist. Elect. - 3 cr P.S. 101 - 3 cr P.S. 263 or ANS 310 - 3 cr Psy 101 - 3 cr Psy 240 - 3 cr Elective - 3 cr	Electives - 15 cr (Psy 101 - 3 cr required for Mus. Educ.)		Social Science
Natural Science	Any combination of courses at the 100 level or above which includes one lab course - 7 cr	Chem, Biol, Geol, or Physics - 16 cr (6 cr in each of 2 disciplines incl. 2 cr of lab)	Nat. Sci - 4 cr (including 1 cr of lab)	Elementary: Math 205 - 3 cr Math Elect. - 6 cr Science Elect. - 7 cr (incl. lab science)	Courses taken as part of associate program are accepted.	Natural Science	
Mathematics	Mathematics and Logic: any combin. of courses at the 100 level or above from the Dept. of Mathematical Sciences (Math, Computer Sci, or Phil. 204) - 6 cr	One semester college level calculus, Math 203 or AS301 - 3 or more cr	Math 161-162 - 7 cr	Secondary: Math Elective - 6 cr Science Elect. - 7 cr (incl. lab science) Math or Science Elective - 3 cr		Mathematics	
Other	Of the total credits required for the degree, 48 must be upper-division (300 or 400 level) courses		Common body of knowledge - 33 cr	Required Education and other courses - 42 - 51 cr	65 cr must be earned beyond assoc. degree, including a minimum of 30 cr in major complex.	Other	
Major Complex or Specialty	At least 30 credits	Variable	33-42 cr	Elementary concentration - 24 cr or more		Variable	Major Complex or Specialty
Minor Complex	At least 12 credits			Secondary integrated major/minor - 45 - 48 cr			Minor Complex

## Registration Requirements for Graduate Students

Graduate students must be registered each semester in which they are actively working toward a degree. A student wishing temporarily to suspend studies should obtain an approved leave of absence. A student failing to either register or to obtain a leave of absence will be dropped from graduate study and will be required to reapply for admission and be readmitted before resuming graduate studies.

**Extended Registration** — A student whose only remaining requirement is the completion of the final examination(s), the removal of a deferred grade from an earlier enrollment, or the completion of a thesis may extend registration. Upon registration for extended registration, the student is considered enrolled for the current semester. There are two categories of extended registration: 1) EXT D 699-001 — for graduate students who are actively working toward a degree but are not in residence and do not use university facilities (\$100 fee per semester); and 2) EXT D 699-002 — for students needing to use facilities and faculty advisement (\$225 fee per semester). Students on extended registration who are considered full-time by their department and the Graduate School Office pay full-time student activity fees and medical insurance fees.

## Graduation

**Responsibility** — The responsibility for meeting all requirements for graduation rests upon the student.

**Application for Graduation** — Degree candidates must formally apply for graduation. The application for graduation must be filed with the Office of Admissions and Records during the semester the student plans to graduate, and not later than the application filing dates which appear in the UAF academic calendar.

Applications for graduation filed after the deadline date will be processed for graduation the following semester.

**Diplomas and Commencement** — UAF issues diplomas to degree candidates 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, an undergraduate student must have earned a cumulative grade point average in all college work attempted at UAF of 3.5 or higher. In addition, a transfer student must have completed 48 semester hours of credit at UAF for a baccalaureate degree or 24 semester hours of credit at UAF for an associate degree. The cumulative grade point average in all college work attempted at all other institutions attended combined with the UAF cumulative grade point average must not be less than 3.5.

Students with cumulative grade point averages of 3.5 will be graduated *cum laude*; 3.8, *magna cum laude*; 4.0, *summa cum laude*, provided they meet the requirements stated above.



Don Scheaffer, (left) director of financial aid at UAF, discusses financial opportunities with Bob Mitchell, a senior electrical engineering student.

# Fees and Financial Aid

## Fees are for the Fairbanks campus only

### Tuition

Students enrolled in undergraduate credit courses will be charged \$38 per credit for residents to a maximum of \$456; and \$114 per credit for non-residents to a maximum of \$1,368. Students enrolling in graduate credit will be charged \$75 per credit for residents to a maximum of \$675; and \$150 per credit for non-residents to a maximum of \$1,350.

In addition to credit charges, non-resident students will be charged a non-resident tuition.

Tuition schedule (per semester):

Total Credit Hours	Resident Undergraduate	Non-resident Undergraduate	Resident Graduate	Non-resident Graduate
12 or more	\$456	\$1368	\$675	\$1350
11	418	1254	675	1350
10	380	1140	675	1350
0-9	38/cr.	114/cr.	75/cr.	150/cr.

### Fee Definitions

**Admission Processing Fee** — Fee of \$20 shall be paid at the time an application for admission is submitted.

**Campus Activity Fee** — Students carrying four or more credit hours will be charged \$3 per credit hour for each on- and off-campus credit, to a maximum of \$32. Students living in any university housing will be charged the \$32 fee regardless of the number of credit hours taken. Students taking three or fewer credit hours have the option of paying the fee of \$32.

**Recreation-Athletics Program** — Those paying the fee are entitled to the use of the Patty Center recreational facilities, and are admitted to university-sponsored athletic events on campus for \$2 per person for hockey and \$1 per person for all other sports.

**Associated Students Program** — Those paying the fee are entitled to participation in all student-managed social, educational, and governmental activities, including receipt of student paper, ASUA book exchange, free legal advice, intramural sports, movies, scheduled social events, student elections, use of Wood Center facilities and a summer campground, and administration of student government.

**Credit by Examination Fee** — A fee of \$15 per credit hour will be charged.

**Graduate Extended Registration Fee** — Graduate students extending registration from previous semester must pay the graduate extended registration fee of \$100 or \$175.

**Student Health Insurance Fee** — All students who are registered for 12 or more credits, or living in any university housing, must be covered by health insurance. They may buy the Student Health Insurance offered by the university or show evidence of other insurance coverage. Students covered by other insurance can waive university coverage by submitting a university health insurance waiver form to the registration cashier at regular scheduled fee payment times. Waiver forms can be obtained from the Center for Health and Counseling. The health insurance fee is optional only to graduate students carrying nine through 11 credits. The amount of the insurance fee will be quoted at registration. The fee covers participation in a medical plan that covers accidents and sickness.

The Student Health Program is administered by the Director of the Center for Health and Counseling, under the direction of the Dean of Students. Hospital and medical treatment for extensive illness and injuries are provided in Fairbanks, under limits of coverage set forth in the student health insurance plan. Each student will be supplied with a brochure outlining the insurance coverage. Questions pertaining to insurance coverage and claim filing should be directed to the Center for Health and Counseling staff.

A married student may secure additional insurance coverage for spouse and children if desired. Rates for such coverage will be quoted at registration. This additional coverage is for the insurance plan only and does not include services at the Center for Health and Counseling.

In addition to the insurance plan, all students enrolled for 12 credits or more, or living in any university housing, must pay a \$45 health center fee. This fee is optional only to graduate students carrying nine through 11 credits. This fee covers normal health center charges during the semester, including physician, laboratory and counseling services.

### Housing Fees —

**Room Deposit** — When applying for housing, a \$50 reservation damage deposit must be returned to the Housing Office with the completed application.

**Room Rent** — Room rent, along with all other fees, is due in full at registration (see Payment of Fees).

**Meal Ticket** — When registering, each residence hall student is required to buy a meal ticket for cafeteria meals. Meal tickets become effective at the evening meal of the first day of upper-class registration for each semester.

For more information see Housing.

**Late Placement and Guidance Test Fee** — A charge of \$5 shall be made for a placement and guidance test taken at a time other than the scheduled time.

**Transcript Fee** — Official and unofficial transcripts of UAF academic records are prepared for a fee of \$3 for each copy. Normal processing time is two weeks; however, at the end of a semester or at other times during the year, four weeks should be allowed for processing time.

There are times when a person is in need of a transcript sooner than one can be produced through the regular processing cycle. For a fee of \$10, paid at the time the request is made, a transcript will be prepared as soon as possible, but not later than 24 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 will be charged. Therefore, when a person needs immediate service for two transcripts, the fee will be \$15. All requests for transcripts must be submitted in writing. Information to be included in the request is dates and places of attendance, social security number and date of birth.

**Late Registration Fee** — Students registering later than the day designated for that purpose shall pay a late registration fee of \$15 for the first working day, plus \$5 for each succeeding working day to a maximum of \$65. This fee is refundable only in the event that all classes for which the student registered are canceled.

**Material Use Fees** — A material use fee may be charged for certain courses which require the use of special materials, supplies or services.

**Music Course Fees** — Fees are charged for the following services or facilities: private instruction (per each 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 \$105 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** — A \$75 annual fee or a \$40 semester fee is charged for on-campus automobile parking.

**Preregistration Deposit** — A \$50 deposit is required to be paid at the time of preregistration by an eligible student completing the process. This deposit will apply as a credit toward the fees for the semester for which the student is preregistering.

**Program Plan Fee** — The Office of the Director 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 a fee of \$5.

**Records Duplication Charge** — Copies of documents on file in the Admissions and Records Office for a student (excluding transcripts from any school) may be obtained by that student, if time permits, upon his or her written request at a cost of \$2.00 per page to a maximum charge of \$10 per request. These copies are unofficial and will bear a statement to that effect. Mailing copies of documents provided through this service is not available.

#### Residency Information — Definition of Residency — University of Alaska.

Alaska residents, members of the United States military on active duty 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 (excepting only vacations or other absence for temporary purposes 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.

This definition of Alaska residency status is solely for the purposes of tuition payment at UAF. The requirements of the university may 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 procedure outlined below:

1. Complete an Application for Residency Status form (The form may be obtained from the Office of Admissions and Records, Signers' Hall.)
2. 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.
3. Return the completed form and the proof to the Office of Admissions and Records prior to the date of registration.

#### Acceptable Examples of Proof of Residency:

- \* Photocopies of rent receipts, well-distributed throughout the past year. (Name and location of rental units must be on receipt.)
- \* Copies of several checks, well-distributed throughout the past year, which were written to local merchants (one per month is acceptable.)

- \* A statement from an employer, on company stationery, indicating employment in Alaska during the past year.
- \* Copy of military orders to Alaska, current military I.D., or military dependent I.D.
- \* Copy of high school transcript which shows attendance in Alaska for the past year.
- \* UAF transcript (already on file) which shows attendance for the immediate past school year.
- \* A statement from a U.S. Postal Service official verifying Alaskan address and receipt of mail at that address over the past 12 months.

**Textbooks** — Students can expect to pay up to \$250 per semester depending on the discipline.

## Payment of Fees

At the announced time of registration, each student is expected to pay all charges due for the entire semester. This includes tuition and fees, room rent, meal ticket costs, student activity fees, health fee and deposits. In addition, any charges unpaid at the end of previous semesters are due and payable prior to re-enrollment at the university.

Students who live in university residence halls may apply for deferred fees for up to one-half of their room and board costs. All other costs must be paid at registration. Requests for this deferred payment plan should be made in writing prior to the registration process. The Office of Student Affairs accepts such applications. Applications submitted on the date of enrollment will be processed on a time-available basis and students run the risk of delayed registration resulting in late fees as well as closed classes.

Provisions of the deferred payment plan are as follows:

1. All fees other than room and board must be paid in full at registration.
2. A minimum of 50 percent (50%) of room and board costs must be paid at registration.
3. The balance is due in a maximum of three equal monthly payments. These are due 30, 60 and 90 days following the first date of registration as announced by the Director of Admissions and Records.
4. A processing fee of \$10 for the initial contract is added to the amount of the contract.
5. Delinquent payments are subject to an additional \$25 per payment.

## Financial Obligations

UAF reserves the right to withhold transcripts, diplomas or final grade reports from students who have not paid all financial obligations to the institution. If a student is delinquent in payment of any amount due the university, registration for succeeding semesters may be withheld.

Registration of any student may be canceled at any time for failure to meet installment contract payments or financial obligations. The registration process is not completed until all fees and charges due the university have been paid.

## Other Fees

Admission Processing Fee .....	\$ 20.00
* Campus Activity Fee .....	3.00/credit - Max. \$32.00
Course Fees (See Course Descriptions) .....	5.00 - 125.00
Credit by Examination Fee .....	15.00/credit
Deferred Fee Charge .....	10.00
Graduate Extended Registration Fee .....	100.00 - 175.00
* Health Center Fee .....	45.00/semester
* Health Insurance, student .....	133.00/semester
<b>Housing Fees:</b>	
Residence Hall, Double Room/Double Occupancy .....	520.00/semester
Residence Hall, Double Room/Single Occupancy .....	750.00/semester
Residence Hall, Single Room/Single Occupancy .....	640.00/semester
Student Apartment Complex (each resident) .....	720.00/semester
Married Student Apartments .....	255.00 - 470.00/month
Meal Ticket (three program options) .....	675.00-725.00/semester
Immediate Service Transcript Fee .....	10.00
Late Placement and Guidance Test Fee .....	5.00
Late Registration Fee .....	15.00 - 65.00
Material Use Fee .....	Variable
Parking Fee .....	75.00/year; 40.00/semester
Preregistration Deposit (Applied Toward Registration Fees) .....	50.00
Program Plan Fee .....	5.00
Records Duplication Charge .....	2.00 - 10.00
Transcript Charge .....	3.00

\*These fees are dependent upon the number of credit hours in which the student is enrolled. See specific fee description for further information. All fees are subject to change.

## Refunds — General University Tuition and Fees

A student who is withdrawing from courses or canceling enrollment must complete an official withdrawal and turn it in at the Office of the Director of Admissions and Records. Refunds will be made as follows:

- In the event that courses for which the student is registered are canceled by UAF, tuition and fees will be refunded in full.
- If the student formally withdraws from a course, refunds will be made according to the following schedule as determined by the date of the formal withdrawal action.
  - 100 percent refund of tuition and fees through the last scheduled day of the regular fee payment period.
  - 75 percent refund of tuition only during work days one through five of the late registration cashiering period.
  - 50 percent refund of tuition only during work days six through 10 of the late registration cashiering period.
  - No refund after the 10th work day of the late registration cashiering period.
  - For classes meeting for more than one week and less than a semester:
    - 100 percent refund of all tuition and fees prior to the first day of instruction.
    - 50 percent refund of tuition only during the first half of the class.

For the purposes of item (e), "first day of instruction for the semester" is as stated in the university class schedule and is not necessarily the first meeting date of any individual course.

- Claim for a refund must be made in writing to the business office at the time of withdrawal. The certified date of withdrawal, as indicated on the official withdrawal slip, will determine the student's eligibility for a refund. Applications for refund may be refused unless they are made during the semester or term in which they apply.
- Students whose registration is canceled as a result of disciplinary action forfeit all rights to a refund of any portion of their tuition and fees.
- Vocational/technical course fees shall be subject to this refund schedule.
- 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 shall be limited to (at most) a refund of tuition and fees paid.

## Refunds — Housing

Specific procedures followed by UAF in refunding to students payments which they have made for board and room are as follows: "Residents withdrawing from the university or who must vacate their rooms for reasons beyond their control will be charged 10 percent of the semester room payment for each week of occupancy. Board refunds are based upon the number of days remaining in the semester during which the meal ticket will not be used, less a five-day service charge. Housing deposits are refunded less any valid assessments by the Office of Student Affairs when a person terminates occupancy. Housing deposits will be carried over for students with housing contracts to subsequent academic years."

## Financial Aid

### What is financial aid?

Financial aid helps make college affordable by paying for college and university costs. Financial aid can help pay for tuition and fees, books and supplies and living expenses. As these costs rise, the need for financial aid becomes greater. The main purpose of financial aid is to provide 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?

U.S. citizens and eligible non-citizens who are admitted or plan to be admitted to the university may apply for financial aid. Current and prospective students should not assume that they will not need or be eligible for financial aid. Clarifications about student eligibility based on citizenship and residency can be obtained at the financial aid office.

### Who receives financial aid?

Approximately 62 percent of all 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, students must:

- Be admitted in "clear" status by the Office of Admissions and Records.
- Be enrolled in a program leading to a degree, diploma or certificate.
- Be making satisfactory academic progress toward their educational goal.
- Submit an application to the proper agency administering the financial aid programs.

In addition to these requirements, to receive federal Title IV funds, students 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 fifth floor of the Gruening Building on the Fairbanks campus of the University of Alaska Fairbanks. Office hours are from 8 a.m. to noon and from 1 p.m. to 5 p.m. Monday through Friday. The telephone number is (907) 474-7256.

### How do students apply?

- Complete the financial aid form to apply for all financial aid programs except the Alaska Student Loan Program.
- Mail it, with the correct fee, to College Scholarship Service, Box 23450, Oakland, CA 94623. The University of Alaska Fairbanks CSS code number is 4866; for item number 92, check "yes."
- Complete a UAF Financial Aid Application and return it to the UAF Financial Aid Office.

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

Students may apply for the Pell Grant, the GSL and the SLS throughout the school year.

### How is eligibility determined?

Residence and physical presence in Alaska for at least two years immediately before applying establishes eligibility for the Alaska Student Loan program. Residency and eligibility requirements are explained in greater detail in "The Alaska Student Loan Program" brochure available from the Alaska Commission on Postsecondary Education, P.O. Box FP, Juneau, Alaska 99811.

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

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

	Married Couple or Single Parent	Single Student Lives Alone	Single Student Lives in UAF Residence Hall
Tuition, fees*	\$ 1,178	\$ 1,178	\$ 1,178
Books, supplies	500	500	500
Food, housing	6,345	4,770	2,450
Transportation	1,710	1,017	240
Misc./personal	1,800	1,188	1,188
<b>TOTAL</b>	<b>\$11,533</b>	<b>\$8,653</b>	<b>\$5,556</b>

\*Tuition for non-Alaska residents, add \$840.

Standard budgets do not always fit everyone. If a student has 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.



## What types of aid are available?

### I. Grants and scholarships

Grants are usually based on the student's financial need, while scholarship awards are often 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 **Pell Grant** is a federal 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 Pell Grant. Send the SAR to the Financial Aid Office. Pell Grants range up to \$2,300 for the 1988-89 school year. Eligible students enrolled in four-year degree programs can receive a Pell Grant for no more than five years; no more than six years of Pell Grant are available for students in five-year programs.

The **Supplemental Educational Opportunity Grant (SEOG)** is a federal grant for exceptionally needy undergraduate students. UAF expects to offer this program to eligible students during 1988-89, but funding is dependent on the federal government. SEOGs at UAF could range from \$100 to \$4,000 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 FAF and a separate SEIG application available during the spring term.

The **Bureau of Indian Affairs (BIA)** offers federal grants to undergraduate full-time students. Students must be at least one-quarter American Indian or Alaskan Native. These grants are based on financial need and are a supplement to 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.

Scholarships are administered by the **UA Foundation** and the **UAF Alumni Association** as well as various academic departments on campus. Separate applications are generally required for each scholarship. Scholarships are announced throughout the school year and applications are available at the Financial Aid Office. Scholarship amounts depend on the funding source and vary greatly among scholarships. More information can be obtained from the University of Alaska Foundation, 590 University Ave., Suite 101, Fairbanks, Alaska 99709, telephone (907) 474-7687.

**Fee/tuition waivers and talent grants** are available in limited numbers to first-time freshmen and new transfer undergraduate students with demonstrated abilities in numerous fields of study. Application should be made as early as possible to the head of the department in which the applicant wishes to study and to the Office of Admissions Counseling, located in Signers' Hall, UAF, Fairbanks, Alaska 99775, telephone (907) 474-7822.

### II. Work

UAF employs student workers for various tasks throughout the year. Employment is administered by individual departments and restricted to full-time students. Students generally 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 Employee Relations, 101 Etelson Building, UAF, Fairbanks, Alaska 99775, telephone (907) 474-7700.

**College Work Study** is a federal program which provides jobs for graduate and undergraduate students with financial need. The UAF Financial Aid Office expects to offer this work program to needy students for the 1988-89 school year. Job placement and working conditions would be similar to regular student employment.

### III. 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 two years before applying. This program is the major source of financial aid for students at UAF. Undergraduate and vocational students may borrow up to \$5,500 each school year. Graduate students may borrow up to \$6,500 each school year. 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's studies are terminated. The finance charge is eight percent interest a year on the outstanding balance. The state of Alaska will pay the interest for students during qualifying period.

The following table outlines what your monthly payments would be over a 10-year repayment cycle for various loan amounts borrowed. In addition to the principal which must be repaid, interest accrues at a rate of eight percent per year.

Total Loan	Monthly Payments	8 Percent Interest	Principal	Total
\$ 3,000.00	\$ 38.40	\$ 1,608.00	\$ 3,000.00	\$ 4,608.00
4,000.00	51.20	2,143.60	4,000.00	6,143.60
5,000.00	63.99	2,679.20	5,000.00	7,679.20
6,000.00	76.80	3,216.00	6,000.00	9,216.00
7,000.00	89.60	3,751.60	7,000.00	10,751.60
8,000.00	102.39	4,287.20	8,000.00	12,287.20
9,000.00	115.19	4,822.80	9,000.00	13,822.60
10,000.00	128.00	5,389.60	10,000.00	15,359.60
20,000.00	255.99	10,719.20	20,000.00	30,719.20

For 1988-89, 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 FP, Juneau, Alaska 99811, telephone (907) 465-2962 or (907) 465-2990. The Alaska Commission on Postsecondary Education provides access to information about your Alaska Student Loan after you have submitted the application. Access is by way of a computer terminal located in the UAF Rasmuson Library. It is available to the public during normal library hours; you may get answers to questions about the processing of your loan application.

The **Guaranteed Student Loan Program (GSL)** provides federally subsidized student loans from a participating lender, such as a bank, credit union or savings and loan association. First- and second-year students may borrow up to \$2,625 each year. Upper level undergraduates may borrow up to \$4,000 each year with a total cumulative maximum of \$17,250. Graduate students may borrow up to \$7,500 each year up to a total, including all prior Guaranteed Loans, of \$54,750. Since this loan is based on financial need, a FAF must be filed before the application can be certified by the Financial Aid Office.

Many national lenders and a few local 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.

**Supplemental Loans for Students (SLS)** is a federal loan program which allows all students to borrow up to \$4,000 each year with an aggregate loan maximum of \$20,000. Other aid must be considered when determining eligibility. Payment of interest is due monthly although repayment of principal will not begin until the student leaves school.

**Parent Loan for Undergraduate Students (PLUS)** is a program for the parents of dependent students. Parents can borrow up to \$40,000 each school year on behalf of an eligible student.

A variable interest rate or finance charge, not to exceed 12 percent, is determined each year for SLS and PLUS programs. A rate of 10.27 percent was established for loans during 1987-88.

**University Loans** are short-term loans for enrolled students and are made to cover unanticipated/emergency education-related expenses. Students who have completed at least one semester as a full-time student in good standing at UAF may apply for a maximum of \$500 per academic year. Interest rate is four percent per annum. Loans must be repaid by December 1, 1988 for students who terminate studies at UAF at the end of the fall 1988 semester; by April 15, 1989 for students leaving at the end of the spring 1989 semester; or by July 15, 1989 for students who will be returning to UAF for the fall 1988 semester.

Applicants must be in good academic standing and must have no outstanding debt with UAF. A co-signer is required and students are required to verify their need for the loan. Applications will be accepted from the first day following late registration until 30 days before the end of each semester.

**Emergency Loans** are available to regularly enrolled full-time students whose financial need is modest and temporary. Students may borrow up to \$100 maximum to be repaid within 30 days. A \$2 service charge is assessed for each loan.

Applicants must be in good academic standing and must have no outstanding debt with UAF. Applications will be accepted from the first day following late registration until 30 days before the end of each semester.

To be eligible for the federal Title IV student aid programs; Pell Grant, SEOG, College Work Study, GSL, SLS and PLUS, 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 Pell Grant Program. More information about the federal programs is found in the publication "The Students' Guide to Five Federal Financial Aid Programs 88-89." The Federal Student Aid Information Center has a toll free number, 1-800-333-4636, 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 Notification of Financial Assistance which explains the type of aid that is offered by the Financial Aid Office. Students may accept or decline the offer of aid. Students must apply each year for financial aid.

The University of Alaska Fairbanks 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?

Applications	Priority deadlines
Alaska Student Loan	May 15 for priority consideration
Financial Aid Form (Pell Grant)	April 1
(Guaranteed Student Loans)	June 1
UAF scholarships	June 1
	Varies

## What does it take to remain eligible?

To continue to receive financial aid, UAF requires aid recipients to be "in good standing" which means undergraduates must earn a 2.00 or higher grade point average (GPA) for all course work for which financial aid was paid; graduate students must maintain at least a 3.00 GPA to be eligible. The financial aid office monitors the academic progress of aid recipients. Both semester and cumulative GPA must be maintained for continued eligibility. Students can expect to receive aid for a maximum of 10 semesters or 130 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 departments and institutional committees.

Aid will be suspended for students who fail to complete the required credits with the minimum GPA or who 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 2.00 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 Financial Aid Office. A panel will review the appeal and the student will be notified of the decision.

## How is payment made to student?

Tuition, fees and amount due UAF at the time of disbursement should be paid before the proceeds of your financial aid is 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.

Students should allow at least five days for processing after the award letter is signed and returned before inquiring about their checks.

## 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, Fifth Floor, Gruening Building, Fairbanks, Alaska 99775, telephone (907) 474-7256.

The Elysian, a sculpture by Linda Howard, was commissioned through the state's one-percent for art program.



# Housing Information

## In General

Each residence hall is staffed with a head resident and several resident advisers. The head resident is responsible for the administration, programming and counseling within the hall. The resident advisers are full-time students who work with the head resident in planning and administering a program of social, recreational and governmental activities.

## Housing Deadlines

Since housing applications are mailed to students with acceptance letters from the Office of Admissions and Records, students should plan to complete their enrollment applications well in advance. UAF currently has a substantial waiting list for married student housing. Contact the Housing Office for more information on the availability of married student housing.

## Eligibility

Students must maintain full-time status (12 credits for undergraduates and nine credits for graduate students) to qualify for student housing. Extended registration is considered full-time for purposes of housing allocation. Students already living on campus must complete pre-registration in order to maintain their housing eligibility. Students should consult the housing staff about regulations concerning maximum terms of occupancy for each degree level.

## Rooms

Student rooms are equipped with a bed, desk, chair, mirror and bureau for each resident. The university does not provide bedding (sheets, pillows, blankets), towels or face cloths. Each hall has recreation-lounge and laundry areas. Regular custodial service is provided in common areas such as corridors, lounges and bathrooms.

## Room Assignment

Hall reservations are made on a first-request, first-served basis provided application and deposit requirements have been completed. Graduate students and upper-class students are given preference over new students in single room assignment. Specific room assignments will be given to the student upon his/her arrival in the residence hall.

UAF reserves the right to reassign individuals to different rooms, halls or apartments at any time in the event such reassignments are determined to be necessary.

Residence hall students are permitted to remain on campus during the Thanksgiving, Christmas and spring vacation periods at no additional cost.

## Restrictions

Guns, other weapons and ammunition are not permitted in residence hall rooms. Students bringing these items to campus will be required to keep them in a supervised storage room. **THERE IS ABSOLUTELY NO EXCEPTION TO THIS POLICY.** Animals are not permitted in campus student housing. Toll telephone calls may not be made from residence hall floor phones, nor should incoming toll calls be accepted. Pay telephones are available.

## Automobiles

Only a limited number of electric outlets for automobiles are available. All motor vehicles garaged, stored or used on campus must be registered with UAF security and bear a University of Alaska Fairbanks decal.

## Residence Halls

The Housing Office is located in the lobby of Bartlett Hall. During the academic year, the office is open from 8 a.m. to 5 p.m. During registration, the office is open extended hours. The residence halls are listed below. Building completion dates are in parenthesis after the hall name.

**ANDREW NERLAND HALL** (1953) houses 102 students in double and single rooms on four floors. Nerland Hall is named for a pioneer Fairbanks merchant, long-time member of the Board of Regents, and president of the board from 1935 until his death in 1956.

**JOHN E. MCINTOSH HALL** (1956) houses 102 male students in double and single rooms on four floors. McIntosh Hall is named for a former president of the Board of Regents.

**WICKERSHAM HALL** (1957) houses 95 female students in single rooms and suites which consist of two sleeping rooms, a study and a bathroom. This three-story hall is named for Judge and Mrs. James Wickersham. Judge Wickersham introduced into Congress the bill that created the University of Alaska, and Mrs. Wickersham served on the Board of Regents.

**MORTON STEVENS HALL** (1958) houses 69 men and 33 women in double and single rooms on four floors. The hall is named for Morton Stevens who was president of the Board of Regents from 1921 to 1932.

**AUSTIN E. LATHROP HALL** (1962) houses 66 men and 74 women, all in double rooms. Lathrop Hall is named for a Fairbanks businessman who served as a member and later as vice president of the Board of Regents from 1932 until his death in 1950.

**IVAR SKARLAND HALL** (1964) houses 138 male and female students (over the age of 21) in double and single rooms on three floors. This hall is equipped to house handicapped students. Skarland Hall was named for a long-time professor of anthropology at the university.

**TERRIS MOORE HALL** (1966) houses 136 female and 182 male students in double and single rooms on eight floors. Moore Hall is named for the second president of UAF.

**E. L. BARTLETT HALL** (1970) houses 322 male and female students in double and single rooms on eight floors. Bartlett Hall is named for E. L. "Bob" Bartlett who served 24 continuous years as one of Alaska's U.S. senators.

**STUDENT APARTMENT COMPLEX** (1984) is comprised of 60 two-bedroom apartments and one four-bedroom apartment, accommodating 244 single students. A board plan is not required for apartment residents since a full kitchen is provided in each apartment. This complex also has six apartments which were designed to accommodate handicapped students.

## Residence Hall Application Procedures

Applications for single student housing are mailed to all students upon notification of acceptance from the Office of the Director of Admissions and Records. Student rooms cannot be reserved until the student is accepted by the university. In order to secure residence hall housing after acceptance, the student should complete the housing-board contract and mail it immediately to the Housing Office, University of Alaska Fairbanks, Fairbanks, Alaska 99775-0880 with a \$50 reservation and damage deposit. Confirmation for residence hall housing is assured when the student receives written notification from the Housing Office. Specific room assignments will be made after Aug. 15 for the fall semester. Spring semester assignments are made as space becomes available. The contract for single student housing in residence halls is for board and room.

Continuing students are eligible for renewal of housing privileges if they: 1) complete pre-registration for the subsequent semester and 2) successfully complete a full-time academic course load. Room selection procedures for continuing students are announced prior to Dec. 1 for the subsequent spring semester and prior to April 1 for the subsequent fall semester.

## Residence Hall Fees

**Room Rent** — Along with all other fees, room rent is due in full at the time of registration. Room charges are currently: \$500 per person in double rooms, \$600 for single rooms and \$650 per person in the student apartment complex. Room fees quoted are per semester and are subject to change. Room rental permits the use of all lounge, recreation and laundry areas, and local telephone privileges.

**Room Deposit** — The completed application for housing, with a \$50 reservation/damage deposit, must be returned to the Housing Office, University of Alaska Fairbanks, Fairbanks, Alaska 99775-0880. If you decide not to attend UAF and a written statement is received by the Housing Office 45 days prior to official opening, your deposit will be refunded.

**Refund of Room Deposit** — If all provisions of the contract have been complied with and no charges for damages have been assessed,

the \$50 deposit will be refunded at the end of the school year. If moving off-campus after fall semester, notice of intent to vacate must be given to the Housing Office on or before Dec. 1 in order to be eligible for a full refund.

The deposit may be used to pay outstanding hall dues and/or charges for repair or replacement of furniture or fixtures for which the student is responsible. Charges for loss or damage of equipment or for defacement of any area in community use, such as lounges, recreation rooms, corridors or bathrooms, may be assessed equally against the residents of the area and deducted from the amount on deposit. In addition, the deposit may be used to pay other outstanding university bills or charges. Any balance remaining in the deposit after all charges have been paid will be refunded after the close of the contract period. If the resident elects to reapply for room in the residence hall for the following year, the deposit will not be refunded, but will be transferred to the renewal application.

**Contracts** — Room and board contracts are for one semester. An application for housing becomes a binding contract at the beginning of the fall semester. Contracts for the fall semester may be renewed for the spring semester after students complete preregistration.

Contracts are voided if the student doesn't attend UAF full-time or is released from the contract because of marriage, health reasons or other emergencies deemed appropriate by the Dean of Students.

## Meal Ticket

During registration each residence hall student is required to purchase a meal ticket for dining hall meals in the Lola Tilly Commons. Full payment for a semester meal ticket is required at that time. 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). Students may choose to purchase a full board plan or a two-meals-per-day board plan.

Meal tickets are effective from the evening of the first day of upper class registration through the last day of final exams. Limited food service is available on a cash basis during vacation periods, except on official university holidays.

Students who do not live in University residence halls may be authorized by the Dean of Student Affairs to purchase meal tickets. The charge will be the price of the meal ticket plus a board net charge of \$110. The \$110 is used to maintain the dining facilities and equipment and is also paid by residence hall students as a part of their rent.

## Family Housing

Family housing is provided in several areas. Laundry facilities are provided but not always on an individual basis for each unit. Storage facilities are extremely limited, and students are not encouraged to bring their own furniture. Personal items such as dishes, utensils and bedding are not provided. Parking areas are provided for each housing complex. Pets are not allowed, except at Yak Estates.

The on-campus units with their completion dates in parentheses after their names are listed below.

**MODULAR UNITS** (1970) contain 30 efficiency units for married students without children.

**HARWOOD HALL** (1964) houses 36 married student couples without children in one bedroom and efficiency units. Harwood Hall is named for Boyd Harwood, a former member of the Board of Regents.

**STUART HALL** (1956) contains 12 units for married students. Stuart Hall is named for Walter T. Stuart who was a member of the Board of Regents.

**WALSH HALL** (1958) houses 13 married student couples without children in one-bedroom units. Walsh Hall is named for the late Michael Walsh, of Nome, who was a member of the Board of Regents.

**HESS VILLAGE** (1972) contains 72 units consisting of: 16 one-bedroom; 48 two-bedroom; and eight three-bedroom units. Children are allowed and units are assigned according to family size. Hess Village is named for Luther Hess, who was a member of the Territorial Legislature, and Harriet Hess, who was a member of the Board of Regents.

**GARDEN APARTMENTS** (1964) houses six student families with children. Apartments are unfurnished to provide an alternative to furnished facilities.

The off-campus housing available is listed below.

**YAK ESTATES** (1971) townhouse apartment complex located four miles from campus on Chena Ridge. There are 48 two-bedroom and 48 three-bedroom units.

## Applications and Eligibility for Student Family Housing

Applications for student family housing are mailed upon request by the Housing Office when proof of admission is received. Assignments are not made for student family apartments unless the head of the household will be enrolled as a full-time student. Families may not change the head of household designation. A reservation deposit of \$25 is due with the completed application. An additional \$50 cleaning/damage deposit is required upon assignment to the apartment.

Space is always at a high demand in student family housing, and the units are therefore assigned on a first-request, first-served basis.

For more information about housing write: Housing Office, 732 Yukon Dr., Bartlett Hall, University of Alaska Fairbanks, Fairbanks, Alaska 99775-0880.



Connie Hamann, (left) and Ann Holmsen live in Stevens Hall, one of the coed residence halls on the lower campus.

# Student Information

## General Responsibilities

The university provides services to assist students in making their educational careers more profitable and meaningful. Mindful of its obligation to assist the total development of the student, UAF continues to encourage individualization in the educational process.

Student services include: (a) orientation activities to assist new students in adjusting to the privileges and responsibilities of membership in the university community; (b) academic counseling and vocational testing; (c) counseling with students relative to their personal problems; (d) financial assistance by means of scholarships, loans, and part-time jobs; (e) support of student organizations, activities and interest groups; (f) special services, advising and tutorial assistance programs for students in need of these services; and (g) a full-service health center available for medical and health education services.

## Disabled Students

Curb cuts and ramps have been installed at UAF to make it easier for everyone to traverse the campus. Most campus buildings contain accessible restroom facilities and elevators; the library and museum are accessible and the swimming pool is equipped with a hydraulic lift. Skarland Hall provides special living accommodations and is connected to two other residence halls by an indoor concourse.

It is the university's policy to make all programs and activities readily accessible through relocation of classes and activities whenever possible, with reasonable structural modifications, or by other means for qualified disabled students. Contact the Coordinator of Services for Disabled Students, Center for Health and Counseling, University of Alaska Fairbanks, Fairbanks, Alaska 99775-0440, (907) 474-7043 or 504 Coordinator, 101 Eielson Building, University of Alaska Fairbanks, Fairbanks, Alaska 99775-5320, (907) 474-7919.

## Honor Societies

The following honor societies are active at UAF.

**Alpha Phi Sigma** — Alpha Phi Sigma is the national honor society for criminal justice students. The society recognizes scholastic excellence by undergraduate and graduate students in the criminal justice sciences. Its purpose is to recognize scholastic achievement and excellence; to encourage research and the dissemination of knowledge gained from research; to inspire pride in their work, and to apply scientific practices and techniques within the criminal justice fields. Students must rank in the top 35 percent of their class to be eligible.

**Psi Chi** — Psi Chi is the national honor society in psychology. Psi Chi's purpose is to advance the science of psychology and to encourage, stimulate and maintain scholarship of the individual members in all fields. To be eligible, students must rank in the top 35 percent of their class.

**Phi Kappa Phi** — Phi Kappa Phi is a national honorary society which recognizes outstanding scholarship in all fields of study. New members are elected by the local chapter. Undergraduates are selected from the top 10 percent of the senior class and the top 5 percent of the junior class. Graduate students are selected on an individual basis from among the top 5 percent of all graduate students, and faculty are selected individually after nomination by a member of the local chapter.

**Sigma Xi** — Sigma Xi is an honor society for scientists. Its goals are to advance scientific research, to encourage companionship among all scientists, and to assist the wider understanding of science. Recent graduates and others who have shown their potential ability in research are elected as associate members. When that potential has been realized in publications, patents, or other research achievements, scientists are eligible for full membership.

**Tau Beta Pi** — Tau Beta Pi was founded in 1885 to recognize outstanding students in engineering, and nationally there have been over 300,000 initiates in 196 chapters. The UAF chapter was chartered in 1975, and to date more than 200 members have been initiated. Membership is open to engineering majors of good character, who are in at least their third semester at UAF, and who are academically in the upper one-fifth of the senior class, or the upper one-eighth of the junior class.

## New Student Orientation Program

Prior to registration each semester (fall and spring), Early Orientation for New Students (EONS) is offered to all new students. Materials concerning this program are forwarded to students two months before the semester begins. This helpful activity is designed to assist students with their adjustment to collegiate life by providing essential information about the university's programs and services. Attendance at EONS is strongly advised.

At the beginning of each semester, a special orientation program is provided for adults who are considering pursuing college studies after an absence from formal education. This program is sponsored by ADRES (Adult Re-Entry Services), which is located within the Career Planning and Placement Office. Students who attend the adult student orientation do not need to attend EONS.

## Student Behavioral Standards

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

Generally, UAF regulations are designed to help each student work efficiently in courses. They are not designed to ignore individuality, but rather to encourage the exercise of self-discipline, which is imposed by a sense of social responsibility. These regulations, in most instances, have been developed jointly by staff and students. Students should become familiar with these regulations as published in the student handbook, *The A Book*.

## Student 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*. Students are encouraged to familiarize themselves with this document which can be found in the Dean of Student's office.

Most students find it relatively easy to adjust to the privileges and responsibilities of university citizenship. For those who find this process more difficult, the university attempts to provide such counsel as the student needs to gain insight and confidence in adjusting to his new environment. In some cases, when a student is unable or unwilling to assume his social responsibilities as a citizen in the university community, the institution may terminate his enrollment, or take whatever action is deemed necessary and appropriate.

A student may be dismissed for cause by the university after appropriate review.

## Academic Opportunities

### Alaska Native Programs

Alaska Native Programs is a group of seven programs and related activities in Native education which were consolidated in 1981 in the College of Liberal Arts. The programs are the Alaska Native Art Center, the Alaska Native Language Program, Alaska Native Language Center, Alaska Native Studies, Cross-Cultural Communications, Special Services and the Student Development Program. Related activities include THEATA Magazine, written by students enrolled in Cross-Cultural Communications courses, the Festival of Native Arts and Tuma Theater. The Student Development Program is designed to improve the university's efforts to meet the needs of the Native community, and includes the Rural Alaska Honors Institute, the Native Leadership Seminar Series and the Elders Seminar Series.

The mission of Alaska Native Programs is twofold. It is to promote Alaska Native student college completion through staff development and student skills development, and to promote understanding of the Native community through research, curriculum development and instruction. Courses are available in arts, languages, education and a variety of other disciplines. Degrees are available in Alaska Native Studies, Applied Linguistics, Yup'ik and Inupiaq languages. Courses taught in Alaska Native Programs also meet certain requirements for other degree programs at the university.

The director of Alaska Native Programs and the rest of the faculty and staff of ANP are located on the 5th floor of the Gruening Building (474-7181), the second floor of the Eielson Building (474-7874 for the Language Program), and in the Fine Arts Building (474-7725 for the Art Center). Course descriptions can be found in this catalog under the specific academic program in which they are included.

## Correspondence Study Program

The University of Alaska statewide system extends its academic resources through the Correspondence Study Program to individuals who are unable to attend on-campus classes and who wish to pursue instruction at home. Annually, more than 2,000 students select from more than 70 correspondence study courses, to help meet requirements for college graduation, to obtain or renew teacher certification, or to meet personal or professional goals. Many courses offered through Correspondence Study were developed and are taught by members of the UAF faculty.

A unique advantage of correspondence study is its flexibility; students may select their own hours of study and work at their own pace in completing course requirements. Individuals may enroll in a correspondence course any time of the year, and one year is allowed from the date of registration for the completion of the course. A student who does not complete within the allotted time and who does not request an extension, will forfeit the registration. Three three-month extensions will be granted on each enrollment, if requested prior to the course expiration date. A \$5 fee will be imposed for each course extension.

Credits earned through the Correspondence Study Program are classified as UAF credits, but are not counted in the study load or grade point average for UAF students. UAF departments will allow a total of 32 correspondence study credits to apply toward a baccalaureate degree. Only six of the last 36 credit hours may be non-resident credits. Repeating a UAF course with an equivalent course through the Correspondence Study Program does not meet the requirements of the repeat course policy at UAF. Tuition for correspondence study courses is \$38 per credit hour.

For further information and a free brochure, please contact the Correspondence Study program, 115 Eielson Building, UAF campus, Fairbanks, Alaska 99775-0560 or call (907) 474-7222.

## Health Sciences — Preprofessional Curricula

Professional schools of medicine and dentistry as well as many of the professional schools in paramedical fields (e.g., medical technology, physical therapy) require one to four years of collegiate work before a student will be admitted. These years of preliminary academic work may be taken at UAF, where the students follow a sequence of courses planned to meet the requirements of the particular professional field in which they are interested. Students interested in health professions should contact the health sciences preprofessional adviser, before registering.

Most premedical students plan on four preliminary years. The students are encouraged to develop their major area of interest, be it either in natural or social sciences or in the humanities. In preparation for medical school the student must gain a thorough understanding of the modern concepts in biology, chemistry, and physics. Students are encouraged to include chemistry and either physics or biology in their freshman course of study. Usually students at UAF follow a curriculum leading to a bachelor of science degree with a major in biological sciences or chemistry, earning a bachelor's degree at the end of four years. Adjustments may be made to meet varying requirements. Premedical students who are accepted in medical school prior to finishing their degree and who wish to receive a bachelor's degree from UAF may obtain from the health sciences preprofessional adviser, a description of the requirements which must be completed.

## The Honors Program

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

The UAF Honors Program is based on the convictions 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 3.50, a

composite ACT score of no less than 26, and no individual ACT score of less than 23. Sophomores applying to the program must have a cumulative college GPA of 3.50 and clear admission to UAF. All Honors Program students must be full-time students.

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 same time.

### 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 28 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 enriched 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 two sciences, a calculus course, English composition, two or more courses from the social sciences and humanities plus one or more courses from business, engineering science, education, etc.

A Summer Honors Reading course is offered each year. For more information and application forms write to: The Honors Program, P.O. Box 900120, University of Alaska Fairbanks, Fairbanks, Alaska 99775, or telephone (907) 474-6612.

## International Programs

The International Programs Council was established in 1984. One of its purposes is to promote a mind set of global thinking—an understanding and appreciation of the history, society, culture and institutions of other nations. Alaska is geographically a world crossroads. Our closest partners are nations of the Circumpolar North and Pacific Rim.

International Programs promotes and supports university programs of instruction, research and public service. For students, International Programs develops and encourages international study programs. It has initiated international student exchange agreements with a number of foreign institutions in the Circumpolar North, Pacific Rim and western Europe.

Detailed information on exchange programs listed below is available from Jean S. Aigner, Director, International Programs Council, 331 Signers' Hall, University of Alaska Fairbanks, Fairbanks, Alaska 99775, (907) 474-5327.

**Gifu University, Gifu, Japan** — Gifu is a national university which provides undergraduate training in Japanese language and culture to students with minimal or no language background, and graduate training in several fields, such as engineering sciences.

**Nagoya Gakuin University, Nagoya, Japan** — This is a private university which provides training in Japanese language and culture to students with at least one year of Japanese language training.

**Hokkaido University, Sapporo, Japan** — This university is geared especially to graduate training, but also provides Japanese language training to students (preferably with previous Japanese study); there is also a summer program available.

**Heilongjiang University, Harbin, Heilongjiang Province, People's Republic of China** — This is a comprehensive, provincial university providing language training to students, preferably with some background in Chinese.

**University of Copenhagen, Copenhagen, Denmark** — This is a state-supported comprehensive university which offers intermediate and advanced Danish language training to students with a year of study at UAF and course work in other fields to students with language competency.

**McGill University, Montreal, Quebec, Canada** — McGill is a private comprehensive university offering course work in English to undergraduate and graduate students.

In these exchanges, students enroll full time at UAF but take course work at the foreign institution. Students are responsible for transportation, housing, food and incidentals at the host institution. Please note that academic schedules are not all similar to UAF's.

Summer programs to Gifu University are available to students with no prior language training. For more information contact Patricia A. Book, 117 Eielson, University of Alaska Fairbanks, Fairbanks, Alaska 99775, (907) 474-7800.

UAF belongs to NICSIA (Northwest Interinstitutional Council on Study Abroad), a consortium of universities in the Pacific Northwest, through which students have an opportunity for study-abroad programs in London and Bath, England; Avignon, France; Cologne, Germany; and Siena, Italy.

Courses are available in the humanities and social sciences as well as foreign languages. Program costs of approximately \$3,000 per term include tuition and books, room and board with a family, public transportation passes, and excursions that are integrated with the courses. Students are eligible to use the Alaska Student Loan Program for these study-abroad opportunities. Students must have at least sophomore standing, and there is a one-term foreign language prerequisite for Avignon and Cologne. The adviser for these programs is Dr. Vincent Pelletier, Department of Foreign Languages and Literatures, 608 Gruening Building, University of Alaska Fairbanks, Fairbanks, Alaska 99775, (907) 474-7396.

## Medical Technology

### University of Alaska/University of Washington Cooperative Program

Students may enroll for four semesters at UAF completing requirements noted below, then apply for acceptance into the professional phase of the Medical Technology Program at the University of Washington for an additional seven quarters. 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. The B.S. degree is granted from the University of Washington.

Program requirements: 60 semester credits with a GPA of 3.00 including the following courses:

	Credits
Biol. 105-106 — Fundamentals of Biology I and II.....	8
Biol. 111-112 — Human Anatomy and Physiology or Biol. 210 — Animal Physiology and Biol. 317 — Comp. Anatomy of Vertebrates .....	8 or 9
Biol. 442 — Bacteriology and Immunology .....	5
Chem. 105-106 — General Chemistry .....	8
Chem. 212 — Quantitative Analysis.....	4
Chem. 321-322-324 — Organic Chemistry and lab .....	9
Math. 271-272 or Stat. 301 — Calculus; Statistics.....	7 or 8
Engl. 111-211 or 213 — Written Communication.....	6
Sp.C. 121 — Fundamentals of Oral Comm: Interpersonal.....	3
Social Science elective — 3 credits, Humanities elective — 3 credits, other electives — 8-9 credits	

For information on application procedures to the University of Washington and the Medical Technology Program contact the Health Professions Adviser, University of Alaska Fairbanks, Fairbanks, Alaska 99775.

## Nursing

The University of Alaska Anchorage College of Nursing is the only baccalaureate nursing program in Alaska and the majority of the course work is available on the Fairbanks campus. The College of Nursing has been designed with the unique health care needs of Alaskans in mind. A combination of climate, geography and divergent cultural backgrounds creates the opportunity — and necessity — for nurses to provide creative health care.

With this situation in mind, the curriculum at the College of Nursing has been developed to foster creativity and independent judgment as part of the role of the professional nurse. The program is built upon the nursing process model and is geared to socialize the student gradually into the role of professional nurse. The first three semesters provide the general education foundation for the nursing courses. Five clinical courses, each building upon the previous one, follow over the next five semesters. The first two courses deal with nursing care of the essentially well and at risk client. The student learns basic theory and physical assessment, communication, nursing process and community health concepts, as well as screening procedures, health teaching and well child care. The third and fourth clinical courses are the only courses not available on the UAF campus. The third course deals with nursing care of clients experiencing temporary disruptions of health, primarily in the hospital setting. During the fourth course the student focuses on nursing care of clients experiencing long-term disruptions of health in both hospital and community settings. Theory and practice include working with groups of clients and community planning programs. The final course synthesizes the principles and practice learned in the previous courses. The student spends a concentrated amount of time in a clinical area of professional interest or need, integrating, expanding and practicing concepts and skills learned throughout the nursing curriculum. The College of Nursing has received full national accreditation for this program.

Recognizing the barriers that returning RN's encounter in pursuit of their baccalaureate degrees, UAA has developed the RN Sections. As an adult learner with accumulated learning and experience, the RN

can articulate well into the degree program. After completion of general education prerequisites and acceptance, the RN can earn 18 credits by successful completion of two written competency validation examinations and a clinical validation. This allows progression to two semesters and a summer session of study with concentration in physical assessment, family and community assessment, environmental health, mental health needs of aggregates, nursing and health care management, nursing research and clinical concentration.

For further information on the baccalaureate nursing program and continuing education offerings in nursing, please contact: UAA College of Nursing, Arctic Health Research Building, Suite 106, University of Alaska Fairbanks, Fairbanks, Alaska 99775, (907) 474-7764.

## Rural Student Services

In response to the needs of students from rural areas of Alaska and students whose cultural background is different from that of the majority of the campus student body, UAF has developed a program called Rural Student Services. The primary concern of this program is helping the student make the transition from a small-school and rural environment to the complexities of university life. Assistance is provided to new students by helping with the necessary forms and paperwork needed to attend the university. The program is especially responsive to the needs of the Alaska Native student.

Once on campus, Rural Student Services offers a place for the student to seek counseling, information, tutoring and help on many aspects of university life. The program offers help and advice to the student during registration. Entering freshmen may choose to use RSS staff members for academic advisement until they have found an academic area of special interest to them. A lounge is open for students and faculty in which they may relax and visit.

Recruitment activities in rural Alaska, as well as special strategies developed in conjunction with rural schools to better prepare students for college, is an emphasis of Rural Student Services.

## School of Career and Continuing Education Opportunities

The School of Career and Continuing Education is the extended learning component of the University of Alaska Fairbanks, and should be viewed as the lead unit and center for promoting, coordinating and delivering instructional activities for adults. Further, it delivers vocational/technical/career training beneficial to the community.

### Community Outreach

Classes in the School of Career and Continuing Education are offered at more than 30 locations including the UAF Fairbanks campus, the Chena Renaissance Center, Moose Creek Center, Hutchison Career Center, Fort Wainwright and Fort Greely Army posts, and Eielson and Galena Air Force bases. The school also extends education and training programs through the Delta Greely Learning Center. The school provides students with credit and non-credit courses, workshops and programs geared toward local interests.

**Chena Renaissance Center** - The School of Career and Continuing Education is based in the downtown Fairbanks Chena Renaissance Center. Educational and training programs offered at the Chena Renaissance Center include accounting, business, computing, entrepreneurship development, office professions and financial institution management. Three computer labs are available at the center, including a comprehensive office professions lab. In addition to regularly scheduled courses, SCCE offers customized personnel training seminars to local businesses at this site. The Learning Resource Center situated in this center can help students improve and expand their skills, and also provides individualized instruction in the areas of mathematics, writing, reading, grammar, spelling and study skills. For further information call 451-7223.

**Hutchison Career Center** - Located near the UAF Fairbanks campus on Geist Road, Hutchison Career Center is the home of several school career programs. With more than 12,000 square feet of shop, classroom and office area, the space has been organized and equipped for skill development. The Culinary Arts Program is located here, providing a daily luncheon service in the center's cafeteria during the academic year. Vocational/technical programs found here include welding, aviation technology, drafting, airframe and powerplant and diesel/heavy equipment mechanics. For further information call 474-5240.

**Moose Creek Center** - Located just east of the city of North Pole and about a mile and a half from the entrance to Eielson Air Force Base, the Moose Creek Center is used extensively by residents of the greater North Pole area and active duty military personnel and their families. A selection of general education, business, computer and office professions courses are offered at the center. The center also houses an office professions lab including the office equipment needed to complete



office professions courses and enhance office support staff skills. For more information call 488-4421.

**Delta Learning Center** - Located one-quarter mile off the main highway across the street from the high school, SCCE's Delta Greely Learning Center is responsible for instructional facilities and activities in the greater Delta Junction area. Professional staff focus on the specific needs of the community and those of surrounding subregions. For more information call 895-4292.

**Military Education Centers** - Programs of continuing education for armed forces personnel are conducted at Eielson and Galena Air Force bases, and Fort Wainwright and Fort Greely Army posts. Interested dependents and other civilians, in addition to active duty military personnel, are welcome to participate in the programs. Offices are maintained at both Eielson and Fort Wainwright to advise, counsel and register students, as well as to offer support to students, faculty, staff and the military community. For more information call Fort Wainwright at 353-6431 or Eielson at 377-1396.

### Career Education

The School of Career and Continuing Education takes responsibility to provide vocational/technical/career training and education in a special skill to be pursued as a trade.

The school's Airframe and Powerplant Mechanics Program allows students to complete the requirements for the Federal Aviation Administration mechanics certificate with both airframe and powerplant ratings. Students may go on to complete their associate of applied science degree in airframe and powerplant through the school.

The aviation degree curriculum is geared to individuals aspiring to a career as professional pilots. Courses are also offered for currently rated flight crew members who wish to refresh or upgrade their aeronautical knowledge in order to maintain and enhance their qualifications.

The school's Culinary Arts Program is a two-year degree program which stresses professional skills and techniques along with learning food service operations principles and services. A certificate program is also available.

The Diesel/Heavy Equipment Mechanics Certificate Program offers students training in the maintenance and repair of trucks, fork lifts, crawler tractors, front end loaders, light trucks and equipment associated with on-and off-highway use.

The Drafting Technology Certificate Program includes two options, each one year: architectural drafting and civil drafting. Students develop skills in mathematics, drawing and lettering, architectural concepts, and design and construction techniques.

The school's one-year Mining Technology Certificate Training Program is unique. It trains students for entry level positions with exploration mining, environmental and consulting companies. Training is geared to meet anticipated demand for workers in open pit mining, surface coal mining, underground metal mining, sand and gravel, and placer mining.

The Fire Science Certificate Program gives students a fundamental working knowledge of the various aspects of fire prevention and protection in both urban and wildlife areas. Both degree and certificate programs are offered in municipal fire control and wildlands fire control. In-service training is also provided.

The school's Welding Program extends from welding basics to advanced pipe and metal plate fabrication. Advanced students may work toward American Welding Society certification or pursue advanced projects.

### Continuing Education

SCCE takes the lead in responding to individual and community needs for innovative training and high quality continuing education. Associate degree programs, certificate programs, academic short courses and non-credit workshops designed for professionals needing technical training for health and human service professionals, personnel needing advanced skills, or employers and employees seeking techniques for improved work performance are all offered. SCCE provides in-services for teachers, in-house supervisory skill seminars for small business owners, and general programs for cultural enrichment as well.

**Associate of Arts Degree** - The A.A. is both an intermediate degree and a terminal degree, which provides a foundation of liberal studies, entry into a variety of paraprofessional degrees and access to all baccalaureate degrees. It is designed for students who intend to continue their education in pursuit of a bachelor's degree or who wish to acquire a broad knowledge base. It is nonspecific in content. Only one A.A. degree per student may be earned.

**Associate of Applied Science Degree** - Six A.A.S. degrees are offered: accounting, business, early childhood development, financial institution management, office professions and paraprofessional counseling.

**Certificate Programs** - Certificate programs in two continuing education areas are designed to provide intensive training in specific career areas. Skills gained are entry level in nature. These certificate programs do not require general degree courses and can usually be

completed in one year (30 credits). Certificate programs are offered in early childhood development and office professions.

**Evening and Weekend College** - SCCE, 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-aided 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 the general university requirements for the Bachelor of Arts degree. SCCE also serves the non-degree seeking student with evening courses for general interest.

**Cable College** - The school offers college-level credit and non-credit courses over television. These telecourses differ somewhat from traditional classes. A typical telecourse lesson requires the use of a study guide, textbook and television to complete assignments. Students communicate with the instructor and other class members over the telephone, audioconferencing, or through the mail. All of these activities, except audioconferencing, can be done at home. Some telecourses are enhanced by a classroom lecture.

**Education Programs for the Military** - SCCE is a Servicemen's Opportunity College Associate Degree (SOCAD) member school. SOCAD allows Army personnel and dependents to finish associate degree programs without losing credits as they transfer to different locations during their military careers. In support of the Community College of the Air Force (CCAF), SCCE also offers a full spectrum of courses at Eielson Air Force Base.

**Special Continuing Education Programs for Small Businesses** - The School of Career and Continuing Education is a Sub-Center of the Statewide Small Business Development Network offering individualized business counseling and support.

The Small Business Development Center coordinator works with students to identify specific problem areas which he can help solve. The current resources library of the Small Business Administration publications includes a variety of business management books for loan to clients. For more information about SBDC services, workshops or adviser training, call 456-1701.

The school also serves the business community through its Business and Entrepreneurship Development Program. Business owners, managers and employees take advantage of special seminars and workshops which provide instruction in the key areas of entrepreneurship and business management. Staff development workshops are also designed to meet the specific training needs of individual companies, organizations and industry groups.

### Student Development and Learning Center

The Learning Resource Center (LRC) is located in the Chena Renaissance Center with a satellite site at the Hutchison Career Center. It is designed to help students improve and expand skills needed to be successful in university classes. The center provides individualized instruction in mathematics, writing, reading, grammar, spelling and study skills.

The LRC staff will help students identify their problem areas in their courses and develop personal study plans. Students may choose to work with course materials or LRC resources. Appointments are not necessary but are encouraged.

Students may use the LRC for independent or small group study. Audiovisual equipment (including computers, VCR, audiocassette recorders, and a film strip projector) are available for student use at the LRC. A typewriter and calculator are also available for student use in preparing assignments.

Workshops are sponsored by the LRC on a variety of topics such as study skills, reading texts, test-taking and special problems in grammar, writing, spelling, math and reading.

Affiliated with the LRC is specialized support for adult students needing career advice. Counselors aid students with career planning, pre-admission advising, program planning, personal crisis intervention and other concerns which affect successful program completion.

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

The Career Development Center offers students resources to help in making career decisions, designing training programs and developing job search skills. The center has a specialized library of occupational and educational information, a computerized career guidance system, selected software available for student use, and individual consultations at various stages of the career development process.

The Career Planning Office 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 Career Planning Office is to assist students in identifying satisfying career choices based on a realistic assessment of themselves, accurate knowledge of the world of work and experience with ways to activate career plans.

Throughout the year, workshops are given which include testing and research of occupational interests and aptitudes, values clarification, self-assessment, decision-making, job identification and goal setting, as well as learning how to be assertive and involving friends and family in support of career plans.

## Summer Sessions

A wide variety of academic programs are offered to residents and visitors during the summer. Summer classes are open to candidates for graduate or undergraduate degrees and to unclassified students wishing to take special courses without reference to degree objectives. Numerous courses and workshops are available throughout the summer. Students may choose from teacher-oriented course work, cross-cultural education, arctic-oriented studies, computer workshops, and field experiences in areas such as anthropology, biology, fisheries, geology, marine sciences and wildlife management. Additionally, basic degree requirements and courses heavily enrolled in during the fall and spring semesters are often available during the summer terms.

Summer Sessions faculty include members of the regular teaching staff, supplemented by outstanding visiting instructors. For more information contact the Director, Summer Sessions, Signers' Hall, University of Alaska Fairbanks, Fairbanks, Alaska 99775-1540, (907) 474-7021.

## Other Campus Services

### Alaska Teacher Placement

Alaska Teacher Placement (ATP) has been designated as Alaska's statewide clearinghouse for educational placement. ATP assists Alaska's public school districts with the employment of educators for their schools.

Educators from Alaska, other states, and around the world register with ATP. When listings are received at ATP, they are referred to registrants who meet the school districts' endorsement requirements. During the summer when school district personnel are on campus interviewing educators, registrants often come to Fairbanks to be available for interviews.

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

Contact Alaska Teacher Placement by writing, dropping by the office, or calling. ATP is located in the Moore-Bartlett Complex, 732 Yukon Drive, Fairbanks, Alaska 99775-1550, (907) 474-6644.

### Alumni Relations

The UAF Office of Alumni Relations is located in 201 Constitution Hall. The university supports its alumni in many ways. UAF provides the Alumni Association with staff support for its publications, board meetings and elections, scholarship administration and special projects. The Alumni Association, in return, supports the university through contributions of time and money. The efforts of the UAFAA are aimed at providing assistance to the university and its students and faculty. If you have questions or comments, call the Alumni Relations Office at 474-7081.

### Athletics and Recreation

Students may participate in supervised programs of intramural sports and intercollegiate athletics, or in unsupervised, open recreational and fitness activities in the Patty Center and adjacent facilities. The Patty Center has multipurpose areas which allow participation (but not always at the same time) in badminton, basketball, calisthenics, dance, gymnastics, handball, swimming, fencing, racquetball, tennis, volleyball, water polo, wrestling, jogging, judo, karate, paddleball and weight training. The Patty Ice Arena provides year-round ice skating and hockey activities.

University trails are available for cross-country running and skiing, including a lighted ski trail. A hillside above the softball/soccer area offers sledding, snow boarding and a place for take-offs for the student hang-gliding club.

In the intramural sports program, men and women students (faculty and staff, too) from the different living groups participate in more than 40 different team and individual competitions each year.

UAF sponsors intercollegiate athletic teams (the "Nanooks") at the NCAA Division II level in men's and women's basketball, men's and women's cross-country running and skiing, co-ed rifle and women's volleyball, and at the NCAA Division I level in men's ice hockey. Students may try out for these teams by contacting the appropriate coach.

## Campus Center/Cocurricular Activities

The *William Ransom Wood Center* is UAF's answer to cabin fever. The bold, massive architecture complements modern Alaska and, at the same time, recalls her frontier ruggedness.

Facilities and services of Wood Center are designed to meet the varied out-of-class needs of the campus community — whether recreational, cultural, leisure, personal, or facilitative. Food service, meeting rooms, and lounge and exhibit areas, in addition to providing their specific functions, also lend themselves to additional special programming.

Service-oriented functions of Wood Center include campus information, facility scheduling, lost and found, sundry sales, and campus switchboard. Showers, laundry facilities and rental lockers are available for use by university students and faculty and staff. Darkrooms and a general-purpose workroom provide students with areas for developing specific skills. The games area is equipped with pocket billiards, table tennis, video games and bowling lanes. The area is regularly used for tournaments, classes, and open play. The Pub is also located in Wood Center and provides a wide variety of entertainment to the university community.

## Career Planning and Placement

Career Planning and Placement offers students and alumni a variety of services. Ideally, upon entry to the university each student should continue to develop lifestyle and career goals. In cooperation with faculty and advisers, the staff in Career Planning and Placement works with any interested student to ensure a well-planned academic program, developed to maximize successful attainment of the student's life and career goals. The Career Planning and Placement staff offers counseling assistance, provides a variety of career information and assists the student in finding summer jobs, and in some cases academic internships, which help toward employment after graduation.

Students are encouraged to make use of 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 Career Planning and Placement office coordinates this activity. Many employers place job openings with Career Planning and Placement and an attempt is made to match the needs of the employer with those of the students and alumni making use of the center.

## Center for Health and Counseling

Once health was viewed as merely the absence of physical illness and it was seen as the responsibility of health professionals. Now health is viewed as a positive growing condition of the total person and people take more responsibility for their own health.

Preventive, educational, diagnostic, and remedial medical and psychological services are offered by the center staff, as well as student health insurance claim processing services.

**Medical Services** — Outpatient service is provided by full-time registered nurse practitioners and a physician. The primary care benefits that you receive by paying the health fee include all routine office care or outpatient services including family planning and immunizations.

Diagnostic services including laboratory procedures are available at the health center. The health fee does not cover the "Pap" test or some other routine examinations or the cost of medications, but these are available on a fee-for-service basis. X-ray services are not available on campus, but are available at any of the medical care facilities in Fairbanks.

**Personal Counseling** — Counseling is a process that allows individuals to explore their own personal feelings, doubts and problems without being judged, evaluated or pressured. The counselors often provide students with methods to change habits, manage stress and gain more control over their lives. The counseling staff believes in the idea that one does not need to be sick in order to get better. Counseling occurs with individuals, couples, with families or within small groups of concerned students. These counseling interactions are kept confidential.

## Copper Street House

The Copper Street house on the Fairbanks campus is available to UAF departments who require a comfortable, informal setting in which to plan a function or event. The Copper Street house is near the center of campus and is used on a regular basis. It is available year-round for reservation through the Scheduling Office in Wood Center.

## International Student Advising

The International Student Adviser assists students who are not citizens of the United States with problems they may have in adapting to American/Alaskan culture and adjusting to the unique characteristics of American higher education. Additionally, the International Student Adviser is responsible for issuing the form I-20 needed to obtain a student visa and acts as a liaison between the foreign student and the U.S. Immigration and Naturalization Service.

## Special Summer Activities

Special summer institutes are often funded by federal and state agencies and private foundations. Summer institutes in the teaching of languages, counseling, guidance, English, science and mathematics have been held.

Special workshops and institutes open to high school age students are also presented. These include the music camp and a youth leadership conference.

An extensive activities program is planned for summer sessions students by the Wood Center Activities Office.

## The Women's Center

The Women's Center, located adjacent to the Center for Health and Counseling, serves as a gathering place for groups and a resting place for individuals. Although the primary emphasis of the center is on responding to the needs and priorities of women students, resources and activities are also open to women faculty, staff and family members. A variety of forums, including workshops, noon hour programs, lending library, counseling and referral services, are offered. The Women's Center is a focal point for identifying and addressing issues of educational, economic, political, social and emotional concern to women. The center is open daily and students are encouraged to drop in for information, assistance and respite.



Mary Lindahl, (left) assistant professor of business administration, and Paul Delys, computer technician for the School of Management, test the new UNISYS computer stations in the lab that was donated by the UNISYS Corp. In the background art student Diane Egley puts the finishing touches on a mural that she and student John Smith were commissioned to paint for the lab.

# Academic Support and Public Service



Journalism student Wayne Attla (left) and producer Mark Badger look at one of the awards that KUAC-TV received for its production "Make Prayers to the Raven," a five-part series on the cultural traditions of the Koyukon Athabaskans of interior Alaska. The two worked closely on the production of the series. KUAC-TV, a public broadcasting station, is one of several public service units at UAF.

Located on the University of Alaska Fairbanks campus are numerous academic support and public service resources, including state and federal agencies. These units provide students with research and informational material, and perform public service functions in Alaskan communities.

## Alaska Sea Grant College Program

Established in 1970, the Alaska Sea Grant Program represents a partnership between the National Sea Grant Program within the National Oceanic and Atmospheric Administration and the University of Alaska. Its purpose is to provide people with the knowledge and means of developing, utilizing and conserving the marine resources of the state and nation through a program of teaching, research and advisory activities.

The Alaska Sea Grant Program administrative office is housed in the Irving II Building on the Fairbanks campus and is administered through the new School of Fisheries and Ocean Sciences. Sea Grant-funded projects can be carried out in cooperation with institutes and units on the various college campuses throughout the state.

The research program includes projects in fisheries oceanography, fisheries sciences, fisheries enhancement, fisheries allocation issues, food science and technology, and aquaculture.

Sea Grant supports continuing programs of information and advisory services. The Public Information Services project, housed within Sea Grant's administrative office, issues a wide variety of publications including scientific research reports, advisory bulletins and conference proceedings; coordinates statewide and national workshops and conferences on important fisheries and marine topics; and creates displays and exhibits for use at fairs and trade shows. Through the Alaska Marine Advisory Program, Sea Grant supports a personal link with marine industries and coastal communities through workshops, lectures, conferences and individual problem-solving.

Alaska Sea Grant's support of education includes graduate and undergraduate studies and stipends at universities in Alaska.

## Computer Support Group

The UAF Computer Support Group (CSG) provides administrative and academic computing support for UAF and the GNOSIS Information Systems for the entire University of Alaska System. The UAF CSG is the primary UAF contact with the University of Alaska Computer Network, which provides extensive data communication and computing services to university units.

Most administrative computing is provided for the university by the UACN. The systems are run on an IBM 4381-14 computer configuration located in Fairbanks. Several administrative computing services are provided by UAF-developed and operated systems.

The UACN data communication backbone has been designed so that from any terminal users may access any host in the network on which they have resources. Using over 8,000 land miles of satellite and microwave communication facilities, the network spans an area 1,400 by 1,100 miles. Any member of the university academic community can request computer resources for a specific course or for independent study.

Primary academic computing support for UAF is provided through a Digital Equipment Corporation VAX 8800. This system is currently configured with 32 megabytes of main memory, 3.2 gigabytes of disc storage, 128 user-accessible ports, and the VMS operating system. Similar VAX systems are located at the university's Juneau and Anchorage locations, and are accessible through the UACN multiplexing and DECNET data communication facilities. The VAX 8800 is also connected to the BITNET data communication system, facilitating data transfer with several hundred other academic computers worldwide.

Some of the software packages available to UAF academic computing users are: BASIC, PASCAL, APL, FORTRAN, COBOL, C, B, SNOBOL, ALGOL, JOVIAL, SPSS, BMDP, BMD, IMSL, TSP, GPSS, CSMP, Sceptre, ECSP, Cornap, IDS-II, IDMS, DataBASIC, FAMULUS, SELGEM, EDT, RUNOFF, electronic mail, mini- and microcomputer cross assemblers and simulators, Calcomp, Tektronic, Displa, and Hewlett-Packard graphics packages, Contour and SURFACEII mapping packages. TEX is available on the VAX 8800, with output on Apple Laserwriters.

The CSG provides consulting services, access to documentation, seminars and classes, and acts as a "one stop" source for all user help. The CSG supports over 500 terminals and microcomputers installed on the UAF campus. Dial-up ports are used by many students to access the systems from their apartments on campus. Each residence hall is equipped with at least one terminal for student use.

The CSG also provides a microcomputer laboratory with IBM-compatible and Apple II compatible computers for general academic use. This facility is located in the library, and software can be checked out from the library reserve room collection.

Various other departments at UAF have both mini- and microcomputers for research and instruction. The Geophysical Institute has a VAX 11/785, and the Institute of Arctic Biology a Data General Eclipse S140 used for faculty and graduate research. The School of Engineering has a VAX 11/730 used for advanced undergraduate research as well as faculty and graduate research. Petroleum engineering has a PDP-11 used for research. The Department of Mathematical Sciences has a VAX 11/750 with a cluster of 17 terminals, a PDP 11/23, and Masscomp graphics workstations for computer science instruction and other student and faculty research. There are also numerous microcomputer systems available for classroom and student use, notably in the School of Management, the School of Engineering, the education department, and the journalism department.

The GNOSIS information system provides an online catalog to the university's library book collections, online circulation of materials, online access to indexes of special Alaskan materials, teleconferencing, and online access to other university information such as the Alaska Transfer Guide, telephone directories, etc. Since GNOSIS is connected to the UACN, users can peruse the book catalog and various other databases from any terminal on campus. Dialup access is available locally through the UACN and locally, nationally, and internationally through AlaskaNet. GNOSIS is also accessible via a packet-radio interface, and work is in progress to interface it to BITNET.

## Conferences and Institutes

Conferences and Institutes is the University of Alaska Fairbanks' conference management center. C&I has a major role in carrying out the university's commitment to public service by providing educational programs in a conference/institute format. It facilitates the dissemination of information, ideas, and knowledge, and facilitates collegial contacts, multidisciplinary interaction, and public dialogue. It assists government, business, and industry groups—as well as university departments—in planning and conducting gatherings from brief educational meetings to sophisticated technical institutes. For these gatherings, C&I offers a continuum of services from program development through logistics management. C&I also serves to coordinate with all off-campus groups desiring to use on-campus facilities for educational programs.

Conferences and Institutes offers educational programs which are local, statewide, national or international in scope. Locations throughout the state are chosen to best suit the needs of each educational activity. Conferences and Institutes' educational programs complement the educational goals of the university.

Educational programs originate through requests from federal, state and local governmental agencies, service organizations, university faculty and staff, professional organizations, and through the department's assessment of educational needs which can be best met through the conference, institute, seminar, or workshop/meeting format.

For more information, contact UAF Conferences and Institutes, 117 Eielson Building, Fairbanks, Alaska 99775, or call (907) 474-7800.

## Cooperative Extension Service

The program is a cooperative educational service of the university and the U.S. Department of Agriculture. The broad purposes of the service are to provide informal education to residents of the state. Extension field offices are located in Fairbanks, Palmer, Juneau, Homer, Ketchikan, Soldotna, Petersburg, Cordova, McGrath, Sitka, Delta, Dillingham, Kotzebue, Kodiak, Anchorage, Nome and Bethel. University extension specialists and district extension agents extend the results of research by the university and a broad range of research institutions to the public. Local people are helped to identify and solve problems and to apply the results of scientific research to the improvement of businesses, homes and communities. Work with young people is conducted through the 4-H and Youth programs. Marine Advisory and Fisheries Extension programs are directed toward commercial fishermen, marine resource developers and users, and the more general marine environmental publics. Special efforts are also directed toward Alaska Native leadership and management education.

Audiences for extension programs include both rural and urban residents. Extension educators serve the consumer, as well as resource production, marketing, agri-business and marine audiences. Extension educators help citizens of the state to plan and organize for broader

economic and social development. Their teaching is carried out informally through television, radio, newspaper and newsletter media publications, business, home and community visits, special interest meetings and short courses.

## Elmer E. Rasmuson Library/Media Program

The university library, named in honor of pioneer Alaskan public servant, philanthropist and businessman, Elmer E. Rasmuson, moved into the library building in the Fine Arts Complex in the fall of 1969. A 69,616 square foot addition was completed in the summer of 1985. With the addition, and the remodeling of 22,000 square feet, the six-level library/media facility now totals 181,616 square feet of well-designed space. The library collection consists of more than 1,300,000 bibliographical items in a variety of print and audiovisual media, including books, periodicals and serial titles, government documents, microfilms, microcards and microfiches, archival documents and manuscripts, maps, photographs, phonograph disks, audiocassettes, videotapes and motion picture films.

The Rasmuson Library/Media Program furnishes academic and research support to UAF students, faculty and staff members, whether on campus or at one of the urban or rural centers. The library's holdings greatly increase the quantity of library materials readily accessible to Fairbanks North Star Borough residents. In addition, as the major research collection in the state of Alaska, the Rasmuson Library functions as a statewide resource for library collection development efforts, library automation, serials union listing, university publications distribution, Alaska information indexing and interlibrary loan transactions.

The newly expanded facility provides seating for 985 persons, and includes lounge areas and closed carrels for use by graduate students and faculty members. The smoking lounge is located on Level 6.

The main book collection is housed on Levels 5 and 6. Materials are classified according to the Library of Congress system.

Level 5 also houses the federal government Documents Collection and Map Collection. The Documents Collection is arranged according to the Superintendent of Documents classification system and constitutes about one-fourth of total library holdings.

The Map Collection, adjacent to the federal documents section, includes an extensive collection of polar regions maps and a complete set of current U.S. Geological Survey topographical maps of Alaska, as well as maps of the other United States, other countries, the world and other planets. Atlases, gazetteers and other cartographic works also are available.

The Juvenile Collection on Level 5 comprises children's books used primarily by teacher education classes.

Because much of the library building is located below ground level, the entrance to the library is at Level 4. The main, or entry level contains the administrative offices, the Distribution Counter, the Independent Learning Area, the All-Hours Study Area, public typewriters, a computer node providing access to the university's Computer Network, WLN Laser Cat, the GNOSIS library system, the Library COM (microfiche) and card catalogs, the Research and Reference Assistance Desk and Reference Collection, the periodical and newspaper indexes, telephone directories and college catalogs on microfiche, and study tables for library users.

Non-circulating collections which are housed on Level 3 include current periodicals and newspapers, bound periodical volumes, and newspapers and periodicals in microform. Other microform collections include the Human Relations Area Files (HRAF), the Educational Research Information Center (ERIC) Resources in Education, and the Native American Legal Materials Collection. Microfilm and microfiche readers and printers and coin-operated photocopy machines are available. The UAF Serial List to June 1984 and the WLN Serial Update list all serial and periodical titles held by the library with UAF call numbers. Current and back issues of national and foreign newspapers are available, including the complete run of The New York Times (1851 to the present).

Level 2 houses the Alaska and Polar Regions collections, including the world-class Alaska Collection which includes books, periodicals and Alaskan newspapers, both current and back issues, the university Archives and Manuscripts Collection, the historical photographs, rare books, rare maps, and the oral history materials. The Archives and Manuscripts Collection comprises the official non-current records of the University of Alaska and many primary sources concerning Alaska history.

The library is a participant in the Washington Library Network (WLN), whose automated database contains more than 4,500,000 bibliographic records of close to 300 libraries located from Alaska to Arizona.

Interlibrary loan services are available to students and faculty members through the Communication Technology unit. The library's use of various computer and electronic mail systems make the resources of other larger university libraries in the nation quickly available to augment the resources available at UAF.

Computerized literature searches are also available at actual cost of the data base plus \$30 for members of the university community through IAS. Computer databases provide access to a wide variety of subject fields.

The library's Instructional Media Production and Communication Technology department (IMPACT) combines two major functions, Communications Technology and Instructional Media. The Communication Technology unit, located on Level 4, includes the Distribution Counter, where the Reserve Collection and Audiovisual Media Collection are located and where audiovisual equipment may be obtained. Additionally, general library materials are checked out at this location.

The Instructional Media Design, Development and Evaluation unit is housed on Level 3 and comprises Instructional Art/Graphic Communications, Instructional Television Production, Instructional Audio Production, the Microcomputer Laboratory, the Faculty, Staff and Student Media Laboratory, and the Media Classroom. Photographic services which provide support to instructional media are directly adjacent.

Among the many special services IMPACT provides are transparency production, lamination, audio and video tape duplication and telecommunications consultation.

The Bio-Medical Library, located in the Arctic Health Research Building on the West Ridge, is a branch of the Rasmuson Library. The Institute of Marine Science library has been merged with the Bio-Medical Library. Bio-Med collections number approximately 36,000 volumes, the majority of which are bound periodical titles. Journal titles cover the fields of the health sciences, microbiology, animal physiology, fisheries, veterinary medicine, plant pathology and the environment as it relates to cold regions research.

The library handbook, *A Guide to Information Research & Services*, is available at the Research and Reference Assistance Desk on Level 4 of the Elmer E. Rasmuson Library.

## KUAC

UAF pioneered public broadcasting in Alaska, and now holds the licenses for KUAC-FM and KUAC-TV. In 1962, the university introduced KUAC-FM. It was the first public radio station in Alaska, the first FM station in Fairbanks, and a leader in satellite communication, delivering same-day news and information to the 49th state, for the first time ever. Today, KUAC-FM, Stereo 104.7 provides a vital link for about 8,000 listeners in Interior Alaska. In 1971, the university acquired the license for the first public television station in the state, KUAC-TV, Channel 9, now watched by more than 37,000 people each week. As members of the National Public Radio, the American Public Radio, the Alaska Public Radio Network, and the Public Broadcasting Service, the Pacific Mountain Network, and the Public Television Network of Alaska, KUAC-FM and KUAC-TV feature national public broadcasting programs. But each station enhances its schedule with locally produced programs emphasizing Alaskan cultural, public and political affairs. All programs are selected on the basis of their quality and their service to education and the arts.

The facilities used to produce the local programs also provide a laboratory for UAF students in the Department of Journalism and Broadcasting. Students are encouraged to gain hands-on experience, and many pursue internships and part-time employment at the stations, located in the Fine Arts/Theatre building.

In partnership with UAF, KUAC offers a variety of broadcast courses. These college credit courses, broadcast over television and radio, allow the convenience of attending college without leaving home or office. Under the supervision of a faculty member, each course revolves around a series of television or radio programs and is accompanied by textbooks, study guides and other materials. Since 1982, KUAC has broadcast telecourses in sociology, earth sciences, psychology, economics, English, political science and aviation.

Through public radio and television, UAF has increased the scope of its educational and public service activities far beyond the campus in Fairbanks.

## Marine Advisory Program

The Marine Advisory Program (MAP), the marine arm of the Cooperative Extension Service, also works closely with the Alaska Sea Grant College Program and is academically affiliated with the School of Fisheries and Ocean Sciences. MAP seeks to interpret and extend relevant and current knowledge in fisheries and marine resources to Alaskan adults, youth, families and community leaders in an understandable and usable form, and to encourage the application of such knowledge to solve important problems and challenges. MAP has faculty and staff distributed throughout the coastal area of Alaska, with specialists located in Anchorage, Juneau and Kodiak and extension agents in Cordova, Dillingham, Homer, Kotzebue, Petersburg and Sitka. Through its work the Marine Advisory Program contributes to the public service mission of the University of Alaska Fairbanks.

## University of Alaska Museum

The University of Alaska Museum is a center for the collection, preservation and dissemination of information pertaining to the north. The museum has a staff of coordinators, curators, technicians and student assistants to collect, preserve, exhibit and interpret the cultural and natural history of Alaska.

While some 100,000 people visit the exhibit area each year, the museum is more than a place to look at interesting objects. The museum is also a research center, and the staff conducts field work, teaches university courses and publishes reports.

The University of Alaska Museum administers a full range of public service and educational programs. Public lectures, children's programs and museum-related workshops are offered throughout the year.

An interdisciplinary display of objects and information from the museum's collections provides a unified view of Alaska's peoples, natural resources and events which have guided the development of the state.

The Aquatic Collection, established in 1970, contains over 44,000 specimens of aquatic invertebrates, fishes and algae. The research effort of the curator is directed toward a basic inventory of Alaska's marine flora and fauna. This inventory is often used as a basis for environmental impact assessments.

The Archeological Collection contains approximately 1.5 million specimens, primarily from Alaska. Additional comparative exchange collections are available for study from other regions of North America, South America, Asia and Europe. The curator and professional staff conduct research encompassing state, national and international archeology. A laboratory and support facilities are maintained for students, faculty and visiting scholars for conducting archeological research.

The Ethnographic Collection contains over 14,000 objects made and used by Alaska Native people from the turn of the century to the present. Exceptional artifacts include baskets, beadwork, ivory carvings, masks, games and toys.

The Art Collection consists of approximately 700 paintings, lithographs and prints of Alaska subjects dating from the late 19th Century to the present. The works of Laurence, Ziegler, Heurlin, Lambert, Machetanz and Crumrine are well represented.

The Herbarium preserves and systematically stores plant specimens. It consists of over 112,000 specimens. These collections represent the United States, Scandinavia, Finland, Greenland, Canada, Japan and the Soviet Union, which provide data for comparative studies.

The Geology Collection includes minerals, Alaskan ores, cores and other geologic samples, and Alaskan gold.

The Tephrochronology Center includes holdings in arctic volcanic ash samples.

The Terrestrial Vertebrate Collection has 5,300 bird study skins and over 25,000 mammal specimens of skins, skulls and skeletons, representing most of Alaska's bird and mammal species. The collections are strongest in gamebirds and furbearers, sandpipers, passerines and rodents.

The Alaska Native Heritage Film Project produces films that document Alaska culture for instruction and public education statewide. The films are made using an approach developed by the project called "Community-Determined Film Making," in which the communities and individuals filmed play key roles in determining the content and direction of the films.

## State and Federal Agencies

The following is an alphabetical listing of the state and federal agencies located on the Fairbanks campus.

**Branch of Alaskan Geology of the U.S. Geological Survey** — This branch conducts a program of geological exploration and research in Alaska. Some of the functions are geologic mapping studies and evaluation of metallic, non-metallic, coal and oil deposits; regional studies of structure and stratigraphy; detailed studies of selected type-areas; application of geology to engineering and related problems; and research in the use of new geologic methods. The Alaskan maps and geological reports are available for public use in the office.

**Bureau of Mines, U.S. Department of the Interior** — The Alaska Field Operation Center, with headquarters at Juneau, maintains a field office in the O'Neill Building. The field office provides support for the center's primary concern for mineral resources and environmental development. The functions that relate to this concern include surveillance and evaluation of industrial and commercial outlook for minerals and fuel deposits; studies to determine the relationship of mineral supply, demand and technology to the national economy; studies and projects concerning the relationship of the mineral industry to environmental problems; and engineering studies regarding effective mining practices.

The field office responds to diverse inquiries from the public and governmental agencies relating to mineral resources and environmental problems; assists in the monitoring of research projects that are conducted by the Mineral Industry Research Laboratory for the Bureau of Mines through contracts with the University of Alaska Fairbanks and maintains liaison with local federal and state agencies in regard to efforts of mutual interest.

**College Observatory** — The College Magnetic and Seismological Observatory is operated by the Branch of Global Seismology and Geomagnetism of the U.S. Geological Survey, with the main facility on the West Ridge of the Fairbanks campus and an outpost facility near Farmers Loop. Originally constructed in 1947, the observatory has expanded to 30 buildings and operates various instruments that continuously gather data for studies in the fields of geomagnetism and seismology. From 1941 to 1946 the observatory was operated by the Department of Terrestrial Magnetism, Carnegie Institution of Washington, in cooperation with the University of Alaska, and then by the U.S. Coast and Geodetic Survey until 1948. Operation of the seismic equipment dates back to 1935.

In 1973 the observatory was transferred from the National Oceanic and Atmospheric Administration of the Department of Commerce to the U.S. Geological Survey of the Department of the Interior. The general mission of the observatory is to produce accurate and comprehensive data in the field of geomagnetism and seismology and cooperate with other scientists and organizations in making studies in various scientific disciplines within the capability of personnel and facilities. The observatory monitors seismic and magnetic activity 24 hours a day. The facility plays a major part in keeping the people of interior Alaska informed of current earthquake activity and informing scientists and organizations of the occurrence of major world magnetic events. The observatory also operates the Barrow Observatory at Barrow, Alaska.

**Institute of Northern Forestry, U.S. Department of Agriculture** — The institute is a unit of the U.S. Forest Service, Pacific Northwest

Forest and Range Experiment Station. Research is focused upon understanding the ecology of, and developing methods for managing, Alaska's boreal forests. Programs are underway to determine the succession of boreal forests and the effects of fire on soil, water, flora and fauna. Field work is conducted throughout the boreal forests in Alaska. The 12,500-acre Bonanza Creek Experimental Forest and the 26,000-acre Caribou-Poker Creeks Experimental Watershed provide convenient research locations for Forest Service and university scientists.

**State Division of Geological and Geophysical Surveys** — As part of the Alaska Department of Natural Resources, this division conducts cooperative investigations with university personnel and government agencies to contribute to the knowledge of Alaska's natural resources. The staff includes archeologists, data processors, engineering geologists, geochemists, geologists, geophysicists and hydrologists.

The laboratory provides analytical services to the staff and also conducts independent research. Field programs are carried out by the scientific staff. Technical information and advice are available to prospectors, exploration companies and the general public. A variety of technical reports and maps are available for sale and for free.

**Transportation Research Laboratory** — The Alaska Department of Transportation and Public Facilities operates a research laboratory in conjunction with the School of Engineering. The university and the department jointly purchase equipment and share laboratory facilities. Engineering faculty and students are involved in research projects which include highway, airport and public facilities design, construction and maintenance, and marine transportation issues. Graduate student thesis projects often involve Department of Transportation and Public Facilities topics.

**Virology-Rabies Unit, Alaska Division of Public Health** — The Northern Region Laboratory provides viral diagnostic service for the entire state of Alaska. In addition, this office is involved with limited and applied research into both human and zoonotic viral diseases.



Cindy Koontz, (left) and Jacob Isaac work as interns for the Institute of Marine Science, part of the newly formed School of Fisheries and Ocean Sciences.

# Research

The research programs at UAF take advantage of the university's unique location in the subarctic of interior Alaska, with easy accessibility to the oceans from the Pacific to the Arctic, accessibility to glaciers and permafrost areas, and a location near the auroral zone, the region in which maximum effects are seen from the bombardment of the earth by charged particles from the sun.

In addition to some research carried out in its academic departments, the university has a number of research institutes and centers that focus upon problems of the Arctic and subarctic concerning the environment of the earth, renewable and non-renewable resources, energy sources and the peoples of the north.

**Agricultural and Forestry Experiment Station** — The research of the Agricultural and Forestry Experiment Station is directed toward increasing the production efficiency of food and wood products, and wisely using the state's lands for agriculture, forestry and recreation. Specifically, the objectives are: (1) to increase the efficiency of production systems for food and wood products; (2) to improve processing, transportation and marketing of food and wood products in Alaska for markets in Alaska and for export; (3) to improve resource inventories and develop land-use planning for agriculture and forestry that will enhance environmental quality; and (4) to develop resource management for improving the quality of life, including revegetation procedures, landscaping and home gardening, and outdoor recreation. Work toward these objectives is carried out in cooperation with the U.S. Department of Agriculture.

Research centers of the Agricultural and Forestry Experiment Station (AFES) are located on the UAF campus and at Palmer in the Matanuska Valley. A plant-materials center, established cooperatively by AFES and the state's Department of Natural Resources, is located near Palmer. Agronomy research is conducted within the Delta and Point MacKenzie Agricultural Projects. Research is under way in western Alaska in support of Alaska's reindeer industry. In addition, the Forest Soils Laboratory is conducting studies within various kinds of forests in interior Alaska in cooperation with federal scientists from the Institute of Northern Forestry, U.S. Forest Service.

The Fairbanks research center staff represents the disciplines of agricultural engineering, agronomy, animal science, botany, economics, forestry, horticulture, outdoor recreation, plant pathology, range science and resource management. The Palmer research center has scientists in agronomy, animal science, agricultural engineering, horticulture and range science. Scientists from the Agricultural Research Service, USDA, representing the disciplines of weed and soil science work cooperatively with AFES at the Fairbanks and Palmer research centers.

Research programs at these various locations provide research opportunities for graduate students.

**Alaska Cooperative Fishery and Wildlife Research Units** — These units are jointly sponsored and financed by UAF, the Alaska Department of Fish and Game and the U.S. Fish and Wildlife Service. The units provide financial support and guidance for graduate training in fishery and wildlife biology and management and carry out research related to graduate training.

Research emphasis of the Fishery Unit is on the ecology and fisheries of aquatic ecosystems, alteration and contamination of Alaskan freshwaters, and evaluation and development of cold water fisheries techniques. The Wildlife Unit research is directed toward ungulate habitat relationships, waterfowl and seabird ecology, wildlife population dynamics, and the impact of northern development on wild animals and their habitats.

Most research projects of the units are field-oriented and conducted by graduate students in close cooperation with university faculty and agency biologists. Graduate work leading to both master's and doctoral degrees in regular university programs may be supported through the units.

**Alaska Native Language Center** — The Alaska Native Language Center was established by state legislation in 1972 to document and promote the cultivation of the Indian and Eskimo languages of Alaska. It is part of the College of Liberal Arts and is the major center in the United States for the study of Eskimo and Northern Athabaskan. Many of the staff in addition to doing research, also teach courses in the Alaska Native Language Program. The center's library houses a valuable collection of manuscript materials in and on Alaska Native languages. It is available for use by scholars and students.

**Center for Cross-Cultural Studies** — Established in 1971, the center is the research and development unit of the Rural College. It promotes programs which concentrate on the needs of Alaska's multicultural

society with particular regard to the development of the state's human resources.

Objectives of the center are to design and conduct basic and applied research projects and programs; develop, conduct and evaluate alternative educational approaches for Alaskan schools; disseminate findings on current Alaskan research in education, human services and behavioral sciences, and rural development; provide technical assistance to school districts, social and family service agencies, Native corporations, local governments, community colleges and university learning centers in rural Alaska; provide professional leadership for the improvement of the training and professional development of rural as well as urban Alaskans; and provide a forum for the development of cross-cultural education programs. Opportunities are available for graduate assistants in research projects.

Future research projects will address issues in the field of cross-cultural education in Alaska, and the areas of human services and rural development. Research projects will be selected which offer the greatest promise of extending our understanding of what is occurring in rural Alaskan communities and what educational and service strategies will be most helpful. Future research will strongly incorporate the perspective of community people and practitioners.

**Fishery Industrial Technology Center** — The Fishery Industrial Technology Center (FITC), located in Kodiak, is part of the School of Fisheries and Ocean Sciences. FITC is dedicated to the contribution of scientific and technical expertise to the harvesting, processing and marketing efforts of the fishing industry. The Center's activities are divided into four major areas—harvesting technology, seafood processing technology, training and support. Its faculty have expertise in the areas of biochemistry, microbiology and seafood technology and engineering. In order to tap these resources for students within the university system, the School of Fisheries and Ocean Sciences hopes to offer a degree program in seafood science and nutrition in the future. FITC research efforts are often coordinated with the Alaska Sea Grant College Program and the Marine Advisory Program.

**Geophysical Institute** — The institute, since its establishment by an Act of Congress in 1946, has earned an international reputation in the study of the earth and its physical environment at high latitudes, and in the training of students in related disciplines. It is one of the few institutions in the world where scientific expertise covers the whole spectrum of geophysical disciplines in a single cohesive institute and where scientists from these diverse disciplines work adjacent to each other.

Programs are established in solar and interplanetary physics, radio physics, magnetospheric, ionospheric and thermospheric physics, auroral physics and chemistry, atmospheric dynamics, cloud physics and radiation, regional meteorology and climatology, aerosols and gases, permafrost, sea ice and river ice, snow and glaciers, paleomagnetism, seismology, volcanology, tectonophysics, geochronology, geothermal energy, geology/geophysics, ice engineering and remote sensing.

The institute is housed in the C.T. Elvey Building on the West Ridge of campus. The present staff numbers approximately 200, including 40 faculty members. Financial support is obtained from the state of Alaska and, in large part, from federal agencies.

Research facilities include the Ester Dome, Poker Flat and Fort Yukon Optical Observatories for auroral and ionospheric studies, the Sheep Creek radio transmitter station, the Poker Flat Research Range (the only university-owned research rocket launching facility in the world), and a potassium-argon geochronology laboratory. A large computer facility is connected to supercomputers in San Diego and elsewhere. The Geophysical Institute is also in the process of constructing a major facility to receive earth resources satellite data and analyze them. In addition to these local facilities, the institute operates many field stations throughout Alaska, Canada, and elsewhere, such as the Augustine Volcano station, a network of seismic event recorders, a geomagnetic meridian chain of optical and magnetic observatories, and an auroral observatory in Svalbard. The institute's specialized library and archives offer an excellent coverage of geophysics. Technical support is provided by an engineering staff and a number of shops providing services in computer programming and data entry, electronics, metal and wood working and fabrication, photography, drafting and graphics.

There are assistantships leading toward master's and doctoral degrees available for well-qualified students to work with Geophysical Institute faculty.

**Institute of Arctic Biology** — The Institute of Arctic Biology is the principal research arm for life scientists in the College of Natural



Sciences. The institute was established in 1963 through authorization from the Alaska Legislature following the recommendation of a select committee of nationally and internationally recognized biologists. The original mandate of the institute, the study of adaptations of plants, animals and human to past and present climates of the Arctic, is maintained but has been expanded to include well-developed programs in ecology and systematics. Ecology programs include research on taiga and tundra sites, including community organization, ecosystem structure and function, functional interactions and interdependencies of plants and animals and the way in which environmental and organismal processes modify nutrient cycling and decomposition within systems. These studies on ecosystem research are closely tied to physiological and biochemical processes of microorganisms, plants and animals, emphasizing coevolved responses such as herbivory which are supported through strong programs such as chemical ecology. Systematics of organisms within arctic and subarctic systems is being studied to establish mechanisms that provide for maintenance of heterogeneity in members of isolated communities. The interest in humans has largely related to anthropologic and archaeological studies of native Alaskans (present and past) and to improvements in reindeer herd management and productivity that are beneficial in a largely natural system. The institute is located in the Laurence Irving and the Arctic Health Research Building, and provides a vivarium, animal isolation facility, surgery and a variety of technical and instrumental facilities and services for coordinated and individual research. Special field sites include a 40-acre experimental biological reserve on campus and the Large Animal Research Station, housing breeding colonies of muskox, caribou and reindeer, adjacent to the campus, plus a reindeer research facility at Nome. The institute maintains the only major ecological research station in the Arctic, at Toolik Lake north of the Brooks Range. Research field camps at Eagle Summit, on alpine tundra, at Cantwell, near Denali National Park, and at Homer and Halibut Cove on the shores of Kachemak Bay provide a wide range of ecological diversity for specimen collection and research.

There is a staff of approximately 75 serving the institute. The faculty have joint appointments with instructional colleges and institute faculty participate in offering courses and graduate programs leading to both M.S. and Ph.D. degrees in a variety of subjects related to arctic biology.

**Institute of Marine Science** — The Institute of Marine Science was established in 1960 by the Alaska Legislature for the purposes of advancing oceanographic knowledge with emphasis on problems of high-latitude seas, of training graduate students in modern oceanography and of conducting both basic and applied marine research. Subsequent expansion has included research and training in marine biology, fisheries oceanography, and special problems in limnology.

Research programs now include: water circulation in the Gulf of Alaska, environmental studies at the oil pipeline terminus of Valdez, fishery systems, seagrass ecology, ecological studies of the northern Bering Sea and southern Chukchi Sea, marine mammals, shellfish and finfish biology, ecological systems associated with the marginal ice zone, the geochemistry of lakes, seawater upwellings, carbon and nutrient cycles, recent and Pleistocene sedimentation and the origin of the continental shelf of Alaska.

Research facilities include modern advanced laboratories on the Fairbanks campus and at Seward. The Seward Marine Center includes a high quality running seawater system, as well as biological and chemical laboratories. Ship operations are also based at the Seward Marine Center. The institute uses other Alaskan coastal facilities as needed. The institute has two research vessels. The R/V ALPHA HELIX routinely operates in the Chukchi and Bering Seas, in Aleutian waters and in the Pacific waters adjacent to Alaska, and the R/V Little Dipper operates on day trips in Resurrection Bay.

Financial assistance for graduate students is provided through state research assistantships and stipend support coming from agency, industry and foundation grants to the institute.

**Institute of Northern Engineering** — Formerly known as the Engineering Experiment Station/Institute of Water Resources, INE is an interdisciplinary organization within the School of Engineering.

INE facilities are shared with the Research Section of the Alaska Department of Transportation and Public Facilities (which investigates many important practical research problems), the Alaska Department of Natural Resources (ADGGS), and several other academic departments of the university. Instruction within the School of Engineering includes accredited undergraduate programs in civil, mechanical and electrical engineering. The school also offers graduate level programs in civil, electrical, mechanical, arctic and environmental quality engineering, engineering and science management, plus interdisciplinary master's and doctoral programs (such as hydrology) tailored to the student's needs.

The Engineering Research Center (ERC) promotes research and educational programs dedicated to solving the engineering problems of Alaska and other northern regions. Research presently encompasses a diversity of fields ranging from basic investigations of geomagnetically induced currents on power systems to the testing and evaluation of

novel road-bed technologies for more cost-effective rural airfields. ERC focuses its research on the special needs of Alaskans and other peoples of the North. Cooperation with other research institutes located on campus has provided important basic information to help seek practical solutions to problems facing Alaskans.

The Water Research Center (WRC) was established in response to the Water Resources Act of 1964 to conduct research dealing with the water resources environment in Alaska. It is located on the Fairbanks campus and has numerous research sites throughout Alaska. It conducts research concerning inland and coastal, surface and subsurface water — its availability, quantity, quality, movement and treatment, and its uses and abuses in Alaska. WRC also provides a strong interdisciplinary environment for graduate students, giving them considerable breadth for tackling difficult problems.

The Transportation Research Center (TRC) helps Alaskans obtain useful information and training to meet local transportation needs. The program focuses on technology related to roads, bridges, airports, seaports, railroads and public transportation.

INE disseminates information through refereed publications, newsletters, reports, workshops and seminars. The publication effort is highlighted with the quarterly journal called "The Northern Engineer." This magazine contains articles on design and technology appropriate for northern climates.

Assistantships are available for well-qualified students to pursue advanced degrees in engineering and water resources.

**Juneau Center for Fisheries and Ocean Sciences** — The Center for Fisheries and Ocean Sciences was officially established in 1974 as part of the Juneau campus of the University of Alaska. Its mandate was to provide instruction in the basic science disciplines and to offer specialized training at both the undergraduate and graduate levels and to conduct research in marine and anadromous fisheries. With the restructuring of the university in 1987, the program became part of the School of Fisheries and Ocean Sciences of the University of Alaska Fairbanks.

Research programs currently include: association of primary production with recruitment of marine fish and invertebrates, aging and growth of larval fish, early life history of commercially important shellfish, pathology of finfish and shellfish, aquaculture of salmon and seaweeds, genetic improvement of salmon brood stocks, molecular genetic stock separation techniques, behavior of brown bear, population dynamics and management of commercially important fish and shellfish, and hydroacoustic stock estimation.

Research facilities are within the three-story Anderson Building (15,000 square feet) located on the shores of Auke Bay, approximately 12 miles north of Juneau. The building is equipped with a high quality seawater system plumbed throughout the first floor and to biological labs on the third floor. A walk-in freezer and coldroom are also located on the ground level, which houses wet and dry lab research facilities and advanced lab instrumentation. A modern microcomputer lab, including graphics stations and a hydroacoustics lab and image analysis station are located within the building. The center's 42-foot research vessel, R/V MAYBESO, routinely operates in inland waters in southeast Alaska. The center cooperatively operates, with the National Marine Fisheries Service, a research salmon hatchery located on Auke Creek, adjacent to the grounds.

Financial assistance for graduate students is provided through research assistantships from state, federal and industry funded grants to the center.

**Mineral Industry Research Laboratory** — The Mineral Industry Research Laboratory was established by the 1963 Alaska Legislature for the purpose of conducting basic and applied research to aid in the development of Alaska's mineral and energy resources.

This unit, as the research branch of the School of Mineral Engineering, conducts studies concerning beneficiation and hydrometallurgy of Alaskan ores, geology and mineral deposits of the state, placer mining and gold recovery, mining related problems in frozen ground, feasibility studies on mineral deposits, transportation system analyses, geologic mapping of selected areas, development of a data storage and retrieval system for mineral deposits and environmental studies related to mining activities.

A well-equipped coal laboratory is devoted to research and service activities on the characterization, petrography, distribution and preparation of Alaska's coals. This facility is expanding to include determination of the potential for utilizing these coals in conversion processes such as liquefaction and gasification.

Cooperative efforts are maintained with state and federal agencies, and where applicable service function is supplied to individuals and industry. Publications pertinent to the industry are issued and made available to the general public.

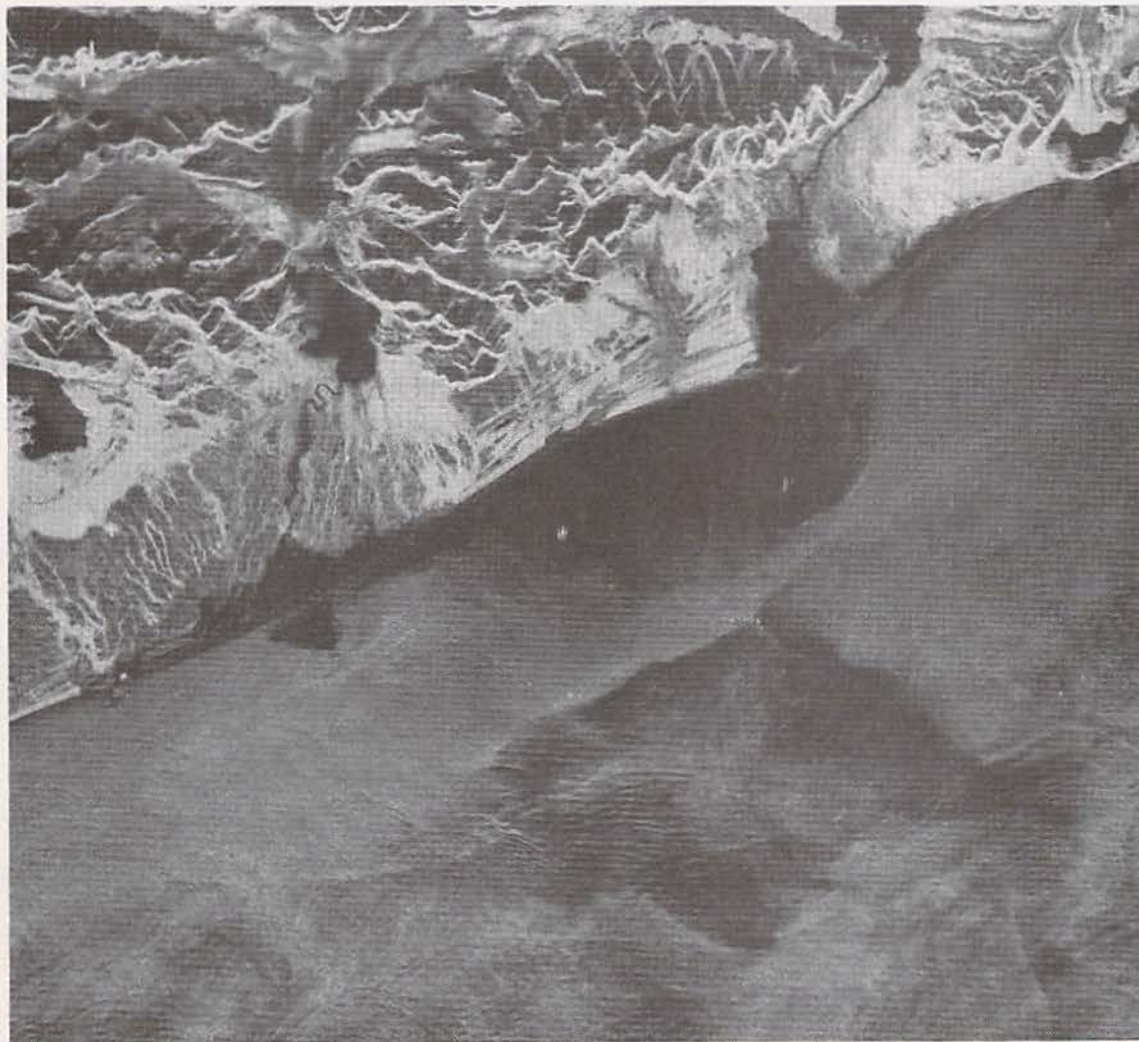
A close relationship is maintained with the educational program which presents opportunities for graduate studies in mineral and energy related fields.

**Petroleum Development Laboratory** — The Petroleum Development Laboratory (PDL) was established in 1984 to engage in practical research to develop and improve technology to maximize the recovery

of Alaska's petroleum and natural gas resources. The work conducted will assist industry and state agencies in their effort to effect additional recovery of petroleum and natural gas resources.

The primary function of the PDL is to explore various aspects of enhanced oil recovery research, including the production of heavy oil through thermal recovery and miscible oil displacement. The goal is to transfer the information from the laboratory and field experiments to engineers who can apply it to problems in their oil fields.

Research programs include: secondary (waterflooding) and enhanced oil recovery processes, a comprehensive study of Alaska's oil and gas reservoirs, development of thermal recovery projects to initiate production from Ugnu and West Sak fields, miscible flooding methods for tertiary recovery from Prudhoe Bay, and estimation of gas hydrate reserves in northern Alaska.



The Alaska Synthetic Aperture Radar Facility, which will be located on top of the Elvey Building, will receive radar satellite images like this one of Alaska's coastline near Yakutat. The dark area in the middle of this image is fresh water from the Alsek River being dumped into the ocean, and moving west along the coastline due to the ocean current.



Nola King, a junior studying accounting and economics, is from Fairbanks.

# Academic Organization

Three colleges and six professional schools 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.

The following pages contain a description of each school and college and the departments found within them. Department faculty and degrees offered are also listed.

## College of Liberal Arts

Anne D. Shinkwin, Dean

The primary mission of the College of Liberal Arts is to provide a broad liberal arts education to students at UAF whatever their area of specialization. The college includes disciplines in the social sciences, humanities, performing arts, mathematical sciences, as well as professional programs in journalism and broadcasting and physical education. Research efforts are in many directions but there is increasing emphasis on Alaskan studies, especially those related to public policy issues. A major college goal is to increase its national and international reputation in northern studies. Students are encouraged to participate in northern research projects and to take advantage of the many course offerings in the college that deal with the circumpolar north. College courses also emphasize the importance of literacy skills for all students in writing and oral communication and mathematics, and fosters an appreciation for the arts through active programs in art, music, and theater.

**Undergraduate Degrees:** Bachelor of arts in Yupik, Eskimo, Inupiaq Eskimo, Alaska Native studies, anthropology, art, English, geography and regional development, history, humanities, journalism, justice, foreign language, linguistics, mathematics, music, music education, northern studies, philosophy, physical education, political science, Russian studies, speech communication and theater. Bachelor of science in anthropology, statistics, computer science, geography, mathematics, physical education and statistics. Bachelor of music. Bachelor of fine arts in art.

**Graduate Degrees:** Master of arts in anthropology, English, Master of fine arts in English, Master of arts in teaching in history and mathematics. Master of science in computer science and mathematics. Doctor of philosophy in mathematics.

## Department of Alaska Native Languages

### Faculty

*Department Head and Professor:* Michael E. Krauss  
*Associate Professor:* Steven A. Jacobson  
*Associate Professor:* Edna MacLean (on leave)  
*Instructors:* Gerald Domnick, Eliza Jones, Astrid Smart  
*Visiting Instructor:* James Nageak

### Degrees

Inupiaq Eskimo, B.A.  
Yupik Eskimo, B.A.

## Department of Alaska Native Studies

### Faculty

*Department Head and Assistant Professor:* Bart Garber  
*Associate Professor:* Dennis Demmert, Michael Gaffney  
*Assistant Professors:* J. Stephen Crosby, Patricia Kwachka

### Degrees

Alaska Native Studies, B.A.

## Department of Anthropology

### Faculty

*Department Head and Professor:* Jean Aigner  
*Professors:* Lydia T. Black, Robert Jarvenpa, Anne D. Shinkwin, G. Richard Scott  
*Associate Professors:* Linda J. Ellanna, W. Roger Powers  
*Assistant Professors:* Charlotte Basham, Ann Frentzen, Patricia Kwachka, Phyllis Morrow  
*Instructors:* Linda Haugen, Greg Owens

### Degrees

Anthropology, B.A., B.S., M.A., Ph.D.

## Department of Art

### Faculty

*Department Head and Professor:* Glen C. Simpson  
*Professors:* L. Stanley Zielinski, Terence T. Choy, Arthur W. Brody  
*Associate Professor:* Barbara Alexander, Kesler Woodward

### Degrees

Art, B.A., B.F.A.

## Department of English

### Faculty

*Department Head and Professor:* John W. Morgan  
*Professors:* John W. Bernet, Alice L. Harris, David A. Stark  
*Associate Professors:* Roy K. Bird, Joseph A. Dupras, Marie Lium, Michael J. Schuldiner, Russell E. Stratton, Russell D. Tabbert, Cynthia L. Walker  
*Assistant Professors:* Eric Heyne, Janis Lull, Leroy Perkins, Frank Soos  
*Instructor:* Doris Ann Bartlett

### Degrees

Creative Writing, M.F.A.  
English, B.A.  
Literature Emphasis  
Teaching Emphasis  
Writing Emphasis  
English, M.A.

## Department of Foreign Languages and Literatures

### Faculty

*Department Head and Assistant Professor:* Vincent Pelletier  
*Professors:* Wolf Hollerbach, John Koo  
*Associate Professors:* Serge Lecomte, Victoria J. Moessner  
*Assistant Professors:* Karen Colligan-Taylor, Nijole Rukas  
*Visiting Assistant Professor:* Anne-Grethe Routley

### Degrees

Foreign Language, B.A.  
French  
German  
Russian  
Spanish

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## Department of Geography

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### Faculty

*Department Head and Associate Professor:* Roger W. Pearson  
*Professor:* Donald F. Lynch  
*Assistant Professor:* Kenneth A. Barrick

### Degrees

Geography, B.A., B.S.  
 Geography and Regional Development, B.A.

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## Department of History

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### Faculty

*Department Head and Professor:* Claus-M. Naske  
*Professor:* John Whitehead  
*Associate Professors:* Peter Cornwall, Carol Gold

### Degrees

History, B.A., M.A.T.

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## Department of Journalism and Broadcasting

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### Faculty

*Acting Department Head and Associate Professor:* Robert B. Arundale  
*Associate Professors:* Dean M. Gottehrer, George M. Winford  
*Visiting Assistant Professor:* Kris Wilson  
*Visiting Instructors:* James Barker, David D. Oberhart

### Degrees

Journalism, B.A.  
 Broadcast  
 News-Editorial

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## Department of Library Science

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### Faculty

*Department Head and Professor:* David A. Hales  
*Professor:* Paul H. McCarthy  
*Associate Professors:* Sherry L. Abrahams, Marvin W. Falk, Thomas J. Hassler, Tamara P.D. Lincoln, William H. Smith, Dennis J. Stephens, Julia H. Triplehorn, C. Eugene West, Sharon M. West  
*Assistant Professors:* Brenda S. Artman, Marguerite Cornwall, Mark C. Goniwiecha, Pauline Gunter, Bruce Parham, Marvin Pollard, William S. Schneider  
*Instructor:* Gretchen Lake

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## Linguistics Program

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### Faculty

*Program Head and Associate Professor:* Lawrence D. Kaplan  
*Professors:* John Koo, Michael E. Krauss  
*Associate Professor:* James M. Kari  
*Assistant Professors:* Charlotte Basham, Patricia B. Kwachka  
*Instructor:* Astrid Smart

### Degrees

Linguistics, B.A.

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## Department of Mathematical Sciences

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### Faculty

*Department Head and Associate Professor:* Clifton Lando  
*Professors:* Jack Distad, Ronald W. Gatterdam, Gary Gislason, Barbara Lando, Robert Piacenza  
*Associate Professors:* Patricia Andresen, Michael Freedman, John P. Lambert, Mitchell Roth, Walter Tape, Dana Thomas  
*Assistant Professors:* John Gimbel, Dusan Jevtic, Pham Xuan Quang, Susan Royer, Robert Sullivan, Steven Thompson

### Degrees

Computer Science, B.S., M.S.  
 Mathematics, B.A., B.S., M.S., Ph.D.  
 Statistics, B.S.

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## Department of Military Science

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### Faculty

*Department Head and Professor:* John Hite, Lt. Col.  
*Assistant Professors:* Anthony Barnhill, Maj.  
*Instructors:* Larry L. Kelsey, Sgt. Maj., Mellinger, Jeffrey J. SFC (p)

### Degrees

Military Science/Army ROTC (minor only)

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## Department of Music

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### Faculty

*Department Head and Associate Professor:* John Duff  
*Professors:* James Johnson, Thomas Johnston, Gordon B. Wright, Theodore DeCorso, Suzanne Summerville  
*Associate Professors:* Kathleen Bulter-Hopkins, Bruno DiCocco, David Stech  
*Assistant Professor:* John Hopkins

### Degrees

Music, B.A.  
 Music, B.M.  
 Music Education  
 Performance  
 Music, M.A.  
 Alaska Ethnomusicology  
 Music Education  
 Music History  
 Performance  
 Theory/Composition  
 Music, M.A.T.

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## Department of Philosophy and Humanities

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### Faculty

*Department Head and Associate Professor:* Barbara Alexander  
*Professors:* Walter Benesch, Rudolph Krejci  
*Assistant Professor:* John Kooistra

### Degrees

Humanities, B.A.  
 Philosophy, B.A.

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## Department of Physical Education

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### Faculty

*Department Head and Assistant Professor:* W. Tom Wells  
*Assistant Professor:* Nancy E. Frith

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**Degrees**

Athletic Coaching (minor only)  
Physical Education, B.A., B.S.

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**Department of Political Science**

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**Faculty**

*Department Head and Assistant Professor:* Kendall Stockholm  
*Professors:* Gerald McBeath, Andrea Helms  
*Associate Professor:* Gary Copus  
*Assistant Professors:* Bart Garber, James Gladden

**Degrees**

Justice, B.A.  
Political Science, B.A.

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**Department of Speech and Drama**

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**Faculty**

*Department Head and Professor:* John S. Leipzig  
*Associate Professors:* Robert B. Arundale (on sabbatical 1988-89), Jayna Orchard (on leave 1988-89)  
*Assistant Professors:* Tara Maginnis, Johnny Murdock  
*Instructors:* Charissa Niedzwiecki, David Oberhart, Marcia Stratton

**Degrees**

Speech Communication, B.A.  
Theater, B.A.

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**College of Natural Sciences**

**Kolf Jayaweera, Dean**

The College of Natural Sciences embraces several areas of study: biology and wildlife; chemistry; biochemistry and molecular biology; geology and geophysics; physics; space physics; and atmospheric sciences. The major undergraduate programs are in biology, geology, chemistry and physics. Work at the master's level is offered in all of the areas of study. Only graduate programs are offered in space physics and atmospheric sciences. Graduate programs take advantage of the outstanding research facilities relating to northern problems: the Geophysical Institute, the Institute of Arctic Biology and the Alaska Cooperative Wildlife Research Unit. The college also offers two interdisciplinary programs, earth sciences and general sciences, specifically intended for those seeking teaching certificates.

**Undergraduate Degrees** - Bachelor of science in geology (options in general geology, economic geology, geophysics and petroleum geology), biological sciences and wildlife management; chemistry; physics and general sciences. Bachelor of arts in biological sciences and earth science.

**Graduate Degrees** - Master of science in biology, zoology, wildlife management, chemistry, geology, geophysics, physics, general science, space physics and atmospheric sciences. Master of Arts in Teaching in biological sciences, chemistry, geology, and physics. Ph.D. in biological sciences, physics, space physics, atmospheric sciences; geophysics; geology. The College of Natural Sciences also offers a variety of interdisciplinary degrees in ecological sciences, wildlife management, atmospheric chemistry, biochemistry and molecular biology.

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**Department of Biology and Wildlife**

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**Faculty**

*Department Head and Professor:* Robert B. Weeden  
*Professors:* F. Stuart Chapin, Dale D. Feist, Howard Feder, R. Dale Guthrie, Stephen F. MacLean, David F. Murray, Luis Proenza, Gerald F. Shields, Ronald L. Smith, Robert G. White, Frank Williamson  
*Associate Professors:* W. Scott Armbruster, R. Terry Bowyer, Jacqueline D. LaPerriere, Edward C. Murphy, Mark W. Oswood  
*Assistant Professors:* Brian M. Barnes, John P. Bryant, John F. Fox, Kent E. Schwaegerle, James Stone Sedinger  
*Instructor:* Douglas L. Schamel

*Coordinator of Biochemistry and Molecular Biology:* Lawrence Duffy

**Degrees**

Biological Sciences, B.A., B.S.  
Biology, M.S., M.A.T., Ph.D.  
Botany, M.S.  
Wildlife Management, B.S.  
Management Biology  
Research Biology  
Wildlife Management, M.S., Ph.D.  
Zoology, M.S., Ph.D.

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**Department of Chemistry**

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**Faculty**

*Department Head and Professor:* L. Claron Hoskins  
*Professors:* Donald Button, Daniel B. Hawkins, Paul R. Reichardt, David Shaw  
*Associate Professors:* Lawrence Duffy, Donald Lokken, Richard Stolzberg, Betty Anne Phillip, John Keller  
*Assistant Professor:* Daniel Jaffe  
*Coordinator of Biochemistry and Molecular Biology:* Lawrence Duffy

**Degrees**

Chemistry, B.A., B.S., M.A., M.S., M.A.T.

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**Department of Geology and Geophysics**

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*Department Head and Professor:* Samuel E. Swanson

**Faculty****Geology Faculty**

*Professors:* Daniel B. Hawkins, David M. Hopkins, Don M. Triplehorn  
*Associate Professors:* R.A. Gangloff, Rainer J. Newberry, Lewis H. Shapiro, Samuel E. Swanson  
*Assistant Professors:* James E. Beget, R. Keith Crowder, Wes Wallace, Keith Watts  
*Adjunct Professors:* Laural Burns, John Davies, John Decker, Charles G. (Gil) Mull, Gar Pessel, Richard D. Reger, Thomas E. Smith, Milton A. Wiltse

**Geophysics Faculty**

*Coordinator and Associate Professor:* Joan P. Gosink  
*Professors:* Nirendra Biswas, Juergen Kienle, Thomas E. Osterkamp, David B. Stone, Eugene M. Wescott, Wilford Weeks  
*Associate Professors:* Hans Pulpan, William M. Sackinger, William J. Stringer  
*Assistant Professors:* Douglas Christensen, Keith A. Echelmeyer

**Degrees**

Geology, B.S.  
Economic Geology  
General Geology  
Petroleum Geology  
Solid Earth Geophysics  
Geology, M.A.T.  
Geology, M.S.  
Economic Geology  
General Geology  
Petroleum Geology  
Geology, Ph.D.  
Geophysics, M.S.  
Snow, Ice and Permafrost Geophysics  
Solid Earth Geophysics  
Geophysics, Ph.D.  
Earth Science, B.A. (Interdisciplinary)

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**Department of Physics**

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**Faculty**

*Department Head and Professor:* John Morack

*Professors:* S. Akasofu, William D. Harrison, Kolf Jayaweera, Joseph R. Kan, Hans Nielsen, Manfred H. Rees, Juan G. Roederer, Glenn E. Shaw, Daniel W. Swift, Gunter E. Weller, Gerd Wendler, Lou-Chuang Lee

*Associate Professors:* David C. Fritts, Thomas J. Hallinan, John S. Murray, John V. Olson, Roger W. Smith, Brenton J. Watkins.

*Assistant Professors:* Sue Ann Bowling, Neal Brown, Koji Kawasaki, Channon Price

*Laboratory Instructor:* John K. Petersen

*Coordinator of the Graduate Program:* Lou-Chuang Lee

*Coordinator of the General Sciences Program:* John Murray

## Degrees

Applied Physics, B.S.

Atmospheric Sciences, M.S., Ph.D.

General Science, B.S., M.S. Physics, B.A., B.S., M.S., M.A.T., Ph.D.

Space Physics, M.S., Ph.D.

General Sciences, B.S., M.S. (Interdisciplinary)

## Rural College

Gerald V. Mohatt, Acting Dean

The Rural College was created in 1987 when the restructuring of the University of Alaska system was implemented. The Rural College is committed to educational processes through which its students are empowered to effect social and economic changes in their communities, and protect and enrich the quality of their lives and culture. Particular consideration is given to the needs of permanent residents of rural Alaska and students in non-traditional settings who seek skills and degrees suited to the rural economy and to the well-being of rural communities and the demands and needs of complex multi-cultural settings.

The college offers a range of academic and programmatic options to students which respond to the changing conditions of Alaska. Short-term courses, workshops, vocational and in-service training, developmental studies, credit for prior learning, and other non-degree oriented services provide community and continuing education opportunities. Associate of Applied Science degrees (including applied business, the health professions, early childhood education and others) reflect local and/or collegewide needs. The Associate of Arts degree provides a foundation of liberal studies, entry into a variety of paraprofessional careers, and access to all baccalaureate degrees. The college offers baccalaureate degrees in education, social work, rural development, psychology and sociology, along with graduate degrees in education and psychology. All programs in the college seek to prepare persons to work effectively in cross-cultural settings and display a sensitivity to and understanding of the diversity of the human condition.

The college is a center for the development and support of distance delivery and field-based degree and non-degree course work throughout the university. Selected degrees and certificates are offered at the dispersed campuses in the Aleutians, Bristol Bay, Chukchi, Interior, Kuskokwim, and Northwest regions of the state which administer instructional programs in association with five departments: Behavioral Sciences and Human Services, Education, General Studies, Rural Development, and Vocational/Technical Education. Research and development activities involving issues associated with rural Alaska are supported and administered through the Center for Cross-Cultural Studies. Academic and logistical support for these distance-delivered programs and correspondence study are provided through the Center for Distance Education.

## Department of Behavioral Sciences and Human Services

### Faculty

*Department Head and Associate Professor:* Gerald S. Berman

*Professors:* E. Clifford Brennen, Charles R. Geist, Richard Katz, Gerald V. Mohatt, Philip O. Nice, M.S. Nagabhushana Rao, John Turner

*Associate Professors:* Gerald S. Berman, Robert S. Cravens\*, Richard G. Possenti, Harris Shelton, Lucy Sparck\*

*Assistant Professors:* James Cole, William Connor, Carol Diehl, Mary Hampton, Victor Lieberman, Laurie Marum\*, Valerie Montoya, Cathy Sink

*Instructors:* Michael Hannigan\*, Patricia Hensch\*, David W. Norcross\*, Patricia Shalter\*

\* Non-Fairbanks faculty

## Degrees

College Student Personnel Administration, M.Ed.

Community Psychology, M.A.

Guidance and Counseling, M.Ed.

Elementary

Secondary

Human Services, B.A.

Psychology, B.A., B.S.

Social Work, B.A.

Sociology, B.A., B.S.

## Department of Education

### Faculty

*Department Head and Professor:* Judith S. Kleinfeld

*Professors:* Judith S. Kleinfeld, David M. Smith

*Associate Professors:* Dennis Demmert, Ralph B. Gabrielli\*, Perry Gilmore, Stephen F. Grubis, David A. Hagstrom, Jerry M. Lipka\*, William H. Parrett, Richard E. Riedl, Barry Sponder\*, Lillian P. Stinson

*Assistant Professors:* Mary M. Birkeland\*, Lisa D. Delpit, Eber Hampton, Barbara G. Harrison, Oscar Kawagley\*, Eric C. Madsen\*, Patricia A. Nelson, Jolene Workman

*Instructors:* Lamont E. Albertson\*, Beverly Grogan\*, Karen Noordhoff, Perry T. Mendenhall\*, William R. Pfisterer, Mary A. Slaughter, Sidney Stephens

\* Non-Fairbanks faculty

## Degrees

Education, B.Ed.

Elementary

Secondary

Education, B.T.

Secondary

Education, Ed.S.

Cross-Cultural Studies

Public School Administration

Education, M.Ed.

Cross-Cultural

Curriculum and Instruction

Educational Leadership

Language and Literacy

## Department of Rural Development

### Faculty

*Department Head and Associate Professor:* Patrick J. Dubbs

*Professor:* Raymond J. Barnhardt

*Assistant Professor:* Nicholas Flanders\*

*Instructors:* Richard A. Caulfield\*, Jeanette Morton\*

\* Non-Fairbanks faculty

## Degrees

Rural Development, B.A.

Applied Land Management

Community Organizations and Services

Community Research and Cultural Documentation

Local Government Administration

Village Corporation Management

## Department of General Studies

### Faculty

*Associate Professors:* Lynn Johnson\*, Joli Morgan\*, Robert J. Shuler\*, Charles S. Wade\*, Theodora Wintersteen\*

*Instructors:* Jonathan Byrne\*, Steve Chamberlain\*, Gregory Moore\*, Maynard Perkins\*, Glenda Schmierbach\*, Astrid Smart\*

\* Non-Fairbanks faculty

## Degrees

Associate of Arts

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## Department of Vocational Education

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### Faculty

Associate Professors: Joli Morgan\*, Samuel I. Rogers\*, Charles S. Wade\*  
 Instructor: Donna VanLuchene\*  
 \* Non-Fairbanks faculty

### Degrees

Associate of Arts

### Non-Fairbanks faculty listed by campus

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#### Chukchi Campus (Kotzebue)

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### Faculty

Director and Associate Professor: Lynn Johnson  
 Instructors: Jonathan Byrne, Beverly Grogan, Gregory D. Moore, Patricia J. Shalter

### Degrees

Associate of Arts

#### Kuskokwim Campus (Bethel)

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### Faculty

Director and Instructor: LaMont Albertson  
 Associate Professors: Robert Cravens, Joli Morgan, Robert J. Shuler,  
 Lucy Sparck, Barry Sponder, Charles S. Wade, Theodora  
 Wintersteen  
 Instructors: Steve E. Chamberlain, Patricia Hensch, David W. Norcross,  
 Glenda Schmierbach

### Degrees

Associate of Arts  
 Associate of Applied Science  
 Community Health Practitioner  
 Early Childhood Education

### Certificates

Community Health Aide  
 Child Development Associate

#### Northwest Campus (Nome)

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### Faculty

Director: Nancy Mendenhall  
 Associate Professors: Ralph B. Gabrielli, Samuel I. Rogers  
 Instructors: Michael Hannigan, Jeanette Morton, Maynard Perkins,  
 Astrid Smart, Donna VanLuchene

### Degrees

Associate of Arts  
 Associate of Applied Science  
 Applied General Business  
 Community Health Practitioner

### Certificates

Business  
 Community Health Practitioner

## School of Agriculture and Land Resources Management

James V. Drew, Dean

The School of Agriculture and Land Resources Management is composed of the Divisions of Resources Management, Forest Sciences, and Plant and Animal Sciences. Also included is the Agricultural and Forestry Experiment Station with facilities at Fairbanks, Palmer and the Forest Soils Laboratory at Fairbanks. Research in many aspects of agriculture, forestry, outdoor recreation, water resource management, soils, park and wilderness management, and resource planning and administration is carried on by faculty of the school.

The instructional program offers a bachelor of science degree in natural resources management with options in natural resources, forestry, or agriculture, and a master of science degree in natural resources management. The courses and programs were developed in close cooperation with many university units and non-university agencies and groups.

State and federal agencies which significantly contribute to the programs by providing guest lecturers, work with graduate students and internship/field work experience for students are the Alaska Department of Natural Resources, Agricultural Research Service, U. S. Forest Service, the Bureau of Land Management, Soil Conservation Service, Alaska Department of Fish and Game, Fairbanks North Star Borough, Alaska Association of Soil Conservation Subdistricts, and U. S. Fish and Wildlife Service.

**Undergraduate Degree** — Bachelor of science degree in natural resources management with options in natural resources, forestry, or agriculture.

**Graduate Degree** — Master of science in natural resources management; interdisciplinary degrees are possible for some students desiring more specialized degrees especially in the agricultural sciences.

### Administration

Dean of the School of Agriculture and Land Resources Management,  
 Director of the Agricultural and Forestry Experiment Station, and  
 Professor of Agronomy (Fairbanks): James V. Drew  
 Associate Dean of the School of Agriculture and Land Resources Management,  
 Associate Director of the Agricultural and Forestry Experiment Station,  
 and Associate Professor of Agronomy (Palmer): G. Allen Mitchell

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## Division of Resources Management

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### Faculty

Division Head and Professor: Alan Jubenville  
 Professor: Robert B. Weeden  
 Associate Professors: Carol E. Lewis, William G. Workman  
 Assistant Professors: Thomas J. Gallagher, Carla A. Kirts

### Degrees

Natural Resources Management, B.S.  
 Natural Resources Management, M.S.

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## Division of Forest Sciences

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### Faculty

Division Head and Professor: Keith Van Cleve  
 Associate Professor: Anthony Gasbarro  
 Adjunct Associate Professor: Gary A. Laursen  
 Assistant Professors: John D. Fox, Glenn P. Juday, Edmond C. Packee,  
 John A. Yarie

### Degree

Natural Resources Management/Forestry Option

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## Division of Plant and Animal Sciences

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### Faculty

Division Head and Professor: Frank J. Wooding



*Associate Professors:* Donald E. Carling (Palmer), Fredric M. Husby, Jennifer H. McBeath, Jay D. McKendrick (Palmer), Stephen D. Sparrow

*Assistant Professors:* Leroy Ben Bruce (Palmer), Robert F. Cullum, Patricia S. Holloway, Chien-Lu Ping (Palmer), Paul M. Windschitl (Palmer)

*Instructor:* Charles K. Knight

## Agricultural Research Service, U.S.D.A.

*Research Soil Scientist:* Verlan L. Cochran

*Research Weed Scientist:* Jeffrey S. Conn

*Research Soil Physicist:* Brenton Sharratt

## Degree

Natural Resources Management/Agriculture Option

## School of Career and Continuing Education

Patricia A. Book, Acting Dean

The School of Career and Continuing Education is the extended learning component of the University of Alaska Fairbanks, and should be viewed as the lead unit and center for promoting, coordinating and delivering instructional activities for adults. Further, it delivers vocational/technical/career training beneficial to the community.

Among the primary responsibilities of the school are vocational/technical/career training and education at certificate and associate degree levels; increasing public access to instructional resources at the university for the residents of the Fairbanks North Star Borough and the surrounding areas; and expanding and enriching the credit and non-credit continuing education opportunities for local residents. Other emphases of the school include providing programs and resources to meet the developmental educational needs of under-prepared university constituencies; outreach to special constituencies of UAF including military service members, mature adults returning to college in an evening or weekend setting, off-campus students, and home-based students; providing a mechanism for meeting the continuous lifelong learning needs of community members; and linking university resources to local community, economic and social development concerns.

**Community Outreach** - Classes are offered at more than 30 locations including the UAF campus, the Chena Renaissance Center, Moose Creek Center, Hutchison Career Center, Fort Wainwright and Fort Greely Army Posts, and Eielson and Galena Air Force bases. The school also extends education and training programs through the Delta Greely Learning Center. The school provides students with credit and non-credit courses, workshops and programs geared toward local interests.

The school's **Certificate Programs** are designed to give intensive training in specific career areas. Skills gained are job entry-level in nature, and course work completed can apply to degree programs. Certificate programs do not require general degree courses and can usually be completed in one year (30 credits). Certificate programs are offered in airframe, powerplant, airframe and powerplant, culinary arts, diesel/heavy equipment mechanics, drafting technology, fire science, mining technology and office professions.

The school offers the **Associate of Applied Science Degree (A.A.S.)** in several occupational fields of study with emphasis on entry into the job market. This degree, usually seen as a terminal degree, can serve as the basis for additional training. The school offers the A.A.S. in accounting, airframe, powerplant, airframe and power plant mechanics, aviation, business, culinary arts, early childhood development, financial institution management, fire science, office professions and paraprofessional counseling.

The **Associate of Arts Degree (A.A.)** is both an intermediate degree and a terminal degree. The Associate of Arts degree provides a foundation of liberal studies, entry into a variety of paraprofessional degrees and access to all baccalaureate degrees. It is designed for students who intend to continue their education in pursuit of a bachelor's degree or who wish to acquire a broad knowledge base. It is non-specific in content. Only one A.A. degree per student may be earned.

## Student Development and Learning Center

### Faculty

#### Career Counseling

*Associate Professor:* DeAnne Hallsten

### Developmental Studies

*Instructor:* Debra Vanasse

### Learning Resource Center

*Coordinator:* Marcelle Skelton

## Department of Academic Programs

### Faculty

#### Academic Support Programs

#### Evening and Weekend College

*Associate Dean:* Patricia A. Book

*Coordinator:* Bud Rager

*Part-time Instructors:* Tanya Arvold, Helen Desinger, Molly Earp, Alexis Easeley, JoAnn Englehard, Linette Finstad, Ron Illingworth, Sarah McNair-Grove, Farhad Memarzadeh, Terry Moore, Peggy Morris, Tanya Morris, Dulce Nobre, Sally O'Connell, Helen Oppen, Cliff Pananen, Barbara Philleo, Julian Rivers, Joe Schneider, Candice Shannon, Todd Sherman, Riki Sipe, Peggy Watson

#### Faculty in other departments:

*Department of English, Associate Professor:* Marie Lium

*Department of Mathematics, Instructor:* Richard Clausen

### Degree

Associate of Arts

## Community and Economic Development

### Small Business Development Center of Alaska

*Coordinator:* Tom Broderson

## Trade and Industry Department

### Faculty

#### Airframe and Powerplant/Aviation Technology

*Associate Professor:* Fred Dyen

*Assistant Professor:* Arvid Weflen

*Instructor:* Albin Reynolds

*Part-time Instructors:* Chris Catalone, Mike Ellsworth, William Hunt

#### Diesel and Heavy Equipment

*Assistant Professor:* Paul Greimann

#### Drafting Technology

*Instructor:* Kurt Torgerson

*Part-time Instructors:* Ken Hobson, Glen Kravitz

#### Natural Resources

*Instructors:* P. Jeffrey Burton, Kurt Torgerson

*Part-time Instructors:* Arne Bakke, Robert Greig, Kate Lamal, Josh Moore, Alfred Sturmann, Louis Tozzi

#### Welding

*Instructor:* Walt Peterson

### Degrees

Airframe & Powerplant, A.A.S., Certificate

Aviation Technology, A.A.S.

Diesel & Heavy Equipment, Certificate

Drafting, Certificate

Applied Mining Technology, Certificate

## Business Systems and Technology Department

### Faculty

#### Applied Business

*Coordinator:* Charlotte Ostermann

*Associate Professor:* Sande Seppamaki

*Part-time Instructors:* Richard Brickley, Arlene Collins, Barbara Cook, Bill Dutton, Denise Ellison, Alan Head, Theresa Henderson, Diane

Hutchison, Jeff Johnson, Terry Kelly, Bob Noreen, Mary Perreault, Gerald Richards

#### Office Professions

Associate Professors: Radene Schroeder, Pat Turner

Part-time Instructors: Jean Burger, Consuello Lopez, Jane Niebauer, Vicki Phipps

#### Degrees

Applied Business, A.A.S.

Financial Institution Management, A.A.S.

Office Professions, A.A.S., Certificate

### Service Industry Department

#### Faculty

##### Computer Applications

Associate Professors: Joe Dart, Dorothy Jones

Part-time Instructors: Helen Barrett, Raymond Billings, Patricia Bulkow, Carol Carlson, Craig Helmuth, Verna Henkel, Bill Rosetti, Doug Toelle, Glenn Wilcox

##### Culinary Arts

Coordinator: Jakub Esop

Associate Professor: Ruiz Anne Rozell

Instructor: Frank Davis

Part-time Instructors: Peter Hansen, Joe Notkin, Bill Pruett, Mary Lou Weese

##### Early Childhood Development

Part-time Instructors: Jo Kuykendall, Barbara MacCallum, Patty Merritt

##### Paraprofessional Counseling

Coordinator: Carol Brice

Part-time Instructors: Carol Allison, John Baertschy, Kornelia Grabinska, Tina Kocsis, Irene McIntosh, Mike Schmoker, Ted Sponsel, Susan Thierman

##### Public Safety — Fire Science

Coordinator: Bud Rotroff

Part-time Instructors: Don Barry, Edith Curry, Charles Lundfelt, Mike McGowan, Eric Mohrmann, Mike Oden, Dave Rockney

#### Degrees

Culinary Arts, A.A.S., Certificate

Early Childhood Development, A.A.S., Certificate

Paraprofessional Counseling, A.A.S.

Public Safety — Fire Science, A.A.S., Certificate

## School of Engineering

Vincent S. Haneman, Jr., P.E., Dean

Professional engineering embraces the wide range of cultural and technical subjects related to the planning, design and construction of works necessary for civilization. An engineer is an innovator, a builder and a problem solver. The engineer turns scientific knowledge into goods and services useful to society and is responsible to society in the decisions he or she makes. The engineer is interested in creating. To be of value to society the engineer frequently works as a member of a professional team often in positions of leadership.

In addition to providing the training necessary for entrance into the professional practice of engineering, an undergraduate degree in engineering provides an excellent background for those desiring to enter law, medical, or business school. The engineering programs at the university emphasize northern problems and principles; therefore, engineering and technology graduates of UAF are in great demand not only in the Alaskan job market, but in all sections of the United States. Engineering involving the additional problems of high latitude make the UAF graduate especially desirable. Many of the leading professional engineers of Alaska are graduates of the UAF engineering program.

Since engineering is based on the physical sciences of mathematics, chemistry and physics, engineering students are introduced to the basic principles in these areas during their first two years of study. The third year of study is largely devoted to courses in the engineering sciences—extensions of the basic sciences forming the foundation for engineering analysis and design. In the senior year, students specialize within their disciplines and draw upon previous learning to focus their studies on creative design and analysis through simulated projects.

Essential concepts and applications in engineering require analysis, synthesis and design. The computer, from very sophisticated PC's to extensive mainframes, is an integral part of the UAF engineering program from the freshman through graduate courses. The reduction to proof is carried forth by the school's Institute of Northern Engineering.

**Undergraduate Degrees** - The School of Engineering offers courses of study leading to the four-year bachelor of science degree in civil, electrical or mechanical engineering. The School of Engineering has all three undergraduate programs accredited by the Accreditation Board for Engineering and Technology (ABET), the agency responsible for assurance of quality in the professional schools across the nation.

**Graduate Degrees** - The school also offers graduate-level programs in engineering management, environmental quality engineering and arctic engineering, as well as in civil, electrical and mechanical engineering, to students with baccalaureate degrees in engineering. Seminars and workshops are offered to practicing engineers and others. Video continuing engineering education provides remote location support of professionals throughout the state and country.

### Department of Civil Engineering

#### Faculty

Department Head and Associate Professor: J. Leroy Hulsey, P.E.

Professors: Robert F. Carlson, P.E., Douglas L. Kane, P.E., Timothy Tilsforth, P.E.

Associate Professors: Jan Botha, P.E., Thomas C. Kinney, P.E.

#### Degrees

Arctic Engineering, M.S.

Civil Engineering, B.S., M.C.E., M.S.

Environmental Quality Engineering, M.S.

Environmental Quality Science, M.S.

### Department of Electrical Engineering

#### Faculty

Department Head and Professor: John D. Aspnes, P.E.

Associate Professors: Kenneth J. Kokjer, P.E., George Mulligan, P.E.

Assistant Professors: Joseph G. Hawkins, B. David Spell, P.E.

#### Degrees

Electrical Engineering, B.S., M.S., M.E.E.

### Department of Engineering and Science Management

#### Faculty

Department Head and Professor: F.L. Bennett, P.E.

#### Degrees

Engineering Management, M.S.

Science Management, M.S.

### Department of Mechanical Engineering

#### Faculty

Department Head and Professor: Ronald A. Johnson, P.E.

Professors: Vincent S. Haneman, Jr., P.E., John P. Zarling, P.E.

Associate Professor: Deben K. Das, P.E., Terry McFadden, P.E.

Assistant Professors: Jonah Y. H. Lee, Edgar G. Conley, P.E., Luis C. Gominho

Visiting Assistant Professor: Patricia K. Brashears, P.E.

#### Degrees

Mechanical Engineering, B.S., M.S.

## School of Fisheries and Ocean Sciences

Vera Alexander, Acting Dean

The School of Fisheries and Ocean Sciences was created in 1987. It is the result of a merger of all the fisheries and marine programs of the University of Alaska into a single unit administered by one campus. This amalgamation has created an opportunity to focus and strengthen those elements into a comprehensive and cohesive unit. SFOS presently educates students through degree programs at the bachelor's level in fisheries science, and at the master's degree level in the areas of fisheries science, marine biology, biological oceanography, chemical oceanography, fisheries oceanography, geological oceanography, and physical oceanography. Planning is also underway for a master's degree level program in seafood science and nutrition. Ph.D. degrees are offered in oceanography. Fisheries degrees at the Ph.D. level are presently undertaken on an interdisciplinary basis, but a formal Ph.D. program in fisheries is being developed.

The School of Fisheries and Ocean Sciences is home to research institutes, academic programs, and public service components throughout the state. Fisheries science degrees are offered through the Program in Fisheries by UAF at the Fairbanks campus and at Juneau\*, where faculty, formerly with the School of Fisheries and Science at the University of Alaska Southeast (formerly the University of Alaska Juneau), are now affiliated with the Juneau Center for Fisheries and Ocean Sciences, a research unit of UAF. The Institute of Marine Science has facilities in Fairbanks and Seward. Its faculty, through the Graduate Program in Marine Sciences and Limnology, instruct and supervise students seeking marine biology and oceanography degrees. The faculty of the Fishery Industrial Technology Center in Kodiak, while presently focusing on research, will be involved with the planned degree program in seafood science and nutrition.

\* Juneau students should also reference the University of Alaska Southeast catalog.

## Graduate Program in Marine Sciences and Limnology

### Faculty

(All faculty are affiliated with the Institute of Marine Science.)

Program Head and Professor: William S. Reeburgh  
 Professors: Vera Alexander, Don K. Button, Sven O.E. Ebbesson, Robert Elsner, Francis H. Fay, Howard M. Feder, John J. Goering, C. Peter McRoy, A. Sathy Naidu, Thomas C. Royer, David C. Shaw  
 Associate Professors: R. Theodore Cooney, Susan M. Henrichs, Raymond C. Highsmith, John J. Kelley, Zygmunt Kowalik, Henry J. Niebauer, F. Gerald Plumley, Donald M. Schell  
 Assistant Professors: Walter R. Johnson, George W. Kipphut, David L. Musgrave

### Degrees

Marine Biology, M.S.  
 Oceanography, M.S., Ph.D.

## Program in Fisheries

### Faculty

(Faculty research affiliations within SFOS as noted.)

Professors: Richard Gard (JCFOS), Jong S. Lee (FITC), Ole Mathisen (JCFOS)  
 Associate Professors: Willard Barber, Robert M. Fagen (JCFOS), John S. French (FITC), Anthony J. Gharrett (JCFOS), Lewis J. Halderson (JCFOS), Terrance J. Quin II (JCFOS), James B. Reynolds, William W. Smoker (JCFOS)  
 Assistant Professors: Charles A. Crapo (FITC), Jeremy S. Collie (JCFOS), William D. Eaton (JCFOS), Brian H. Himelbloom (FITC), Jeffrey C. Nash (FITC)

### Degrees

Fisheries Science, B.S.  
 Research (Fairbanks)  
 Management (Fairbanks)  
 Fisheries Science, M.S.  
 (Fairbanks and Juneau)

## Public Service Faculty

(All associated with the Marine Advisory Program.)

Professor and Chairman: Donald E. Kramer  
 Professor: John P. Doyle  
 Associate Professors: D. Douglas Coughenower, Curtis L. Kerns, Brian C. Paust, Craig S. Wiese  
 Assistant Professors: Dolly A. Garza, Henry M. Pennington, Richard G. Steiner  
 Instructors: Paula J. Cullenberg, T. Mark Willette

## School of Management

Michael L. Rice, Dean

The School of Management offers programs of study which provide the foundation for professional careers in private or public, small or complex organizations. The undergraduate programs also provide the basis for graduate study, leading to the opportunity for enhanced business or government careers or for further training as a teacher or researcher in accounting, business administration, or economics. The graduate program is designed to provide management education for students with a wide variety of undergraduate degrees. The main objective of the school is to prepare literate, articulate and broadly educated business specialists, who are knowledgeable in fundamental economic laws, accounting and information systems, and who are sensitive to interpersonal relationships and the dignity of the individual. The school seeks to provide the technical knowledge of the accounting, economics and management professions while also emphasizing an awareness of our society and its cultural values. All of these programs emphasize the problems and circumstances unique to Alaska including entrepreneurship, venture 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.

**Acceptance of upper division transfer credits toward major and foundation course requirements for the B.B.A. degree:**

Courses taken at a two-year institution, or as a lower-division course in a four-year academic institution, will not be considered as replacements for upper-division course requirements for the B.B.A. degree unless the student can demonstrate a level of knowledge equivalent to material obtained in UAF courses. That level of knowledge will be determined by the department offering the course, and must be supported in writing by the department head.

Admission to 300/400 level B.A. courses are limited to those students with junior standing who have completed all required 100 and 200 level courses in Accounting, Business Administration, Economics and Mathematics.

**Undergraduate Degrees** — The school grants the following undergraduate degrees: bachelor of business administration with majors in accounting, economics, finance, management, marketing, and travel industry management; bachelor of arts degrees in economics.

**Graduate Degrees** — The school offers the master of business administration degree and the master of science in resource economics.

## Department of Accounting

### Faculty

Department Head and Professor: M. Burton Oien  
 Professors: Milton A. Fink, Henry Wichmann  
 Associate Professors: Thomas E. Bartlett, Ken Boze, Clifford T. Cox, E. Thomas Robinson

### Degrees

Accounting, B.B.A.

## Department of Business Administration

### Faculty

Department Head and Professor: Peter G. Biesiot  
 Professors: David B. Hoffman, William G. Phillips, Michael L. Rice  
 Associate Professors: Marvin J. Andresen, Anne Marie Francesco, John Lehman, Mary Lindahl, Ralph W. Nestor, John N. Taylor, Paul C. Taylor, Howard L. Zach  
 Visiting Associate Professor: Oliver Yau

*Assistant Professors:* Joseph Ben-Ur, Laura M. Milner, R. Kelley Pace  
*Adjunct Assistant Professor:* Cory R. Borgeson  
*Lecturers:* Charles W. Dexter, Richard W. Hompesch II

### Degrees

Business Administration, B.B.A.  
 Finance  
 International Business  
 Management  
 Marketing  
 Travel Industry Management  
 Business Administration, M.B.A.  
 Computer Information Systems (minor only)

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## Department of Economics

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### Faculty

*Department Head and Assistant Professor:* Monica Thomas  
*Professors:* Wayne C. Thomas, Richard J. Solie (Adjunct)  
*Associate Professors:* Otis W. Gilley, J. Patrick O'Brien, Yeung-nan Shieh  
*Assistant Professors:* Chris Fawson, Dennis Olson, Nancy Williams, Robert R. Logan  
*Visiting Assistant Professors:* Richard Adu-Asamoah, Steven T. Yen

### Degrees

Economics, B.A., B.B.A.  
 Resource Economics, M.S.

## School of Mineral Engineering

Donald J. Cook, 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, the Petroleum Development Laboratory and the Mining Extension Programs.

Emphasis is placed upon engineering as it applies to the exploration, development and exploitation of mineral and energy resources in the education and training of the undergraduate and graduate students who will be tomorrow's leaders in these industries.

**Undergraduate Degrees** - The School of Mineral Engineering offers programs of study leading to the bachelor of science degree in geological, mining and petroleum engineering. The geological and mining programs are accredited by the Accreditation Board for Engineering and Technology (ABET) which is the organization responsible for guaranteeing standards and quality in nation wide engineering schools.

**Graduate Degrees** - Graduate-level programs are also offered in geological engineering, mining engineering, mineral preparation engineering and petroleum engineering in conjunction with the research activities of the Mineral Industry Research Laboratory (MIRL) and the Petroleum Development Laboratory (PDL).

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## Department of Mining and Geological Engineering

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### Faculty

*Department Head and Associate Professor:* R. C. Speck  
*Professors:* D. R. Maneval; P. D. Rao; F. Skudrzyk  
*Associate Professors:* S. Bandopadhyay, S. L. Huang, R. C. Speck, N. I. Johansen, P.E.; M. Sengupta  
*Assistant Professor:* P. Metz  
*Visiting Assistant Professor:* H.K. Lin  
*Instructor:* D. Walsh  
*Visiting Associate Professor:* F. Letowski  
*Post Doctoral Fellow:* H. K. Lin

### Degrees

Geological Engineering, B.S., M.S.  
 Mineral Preparation Engineering, M.S.  
 Mining Engineering, B.S., M.S., E.M.

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## Department of Petroleum Engineering

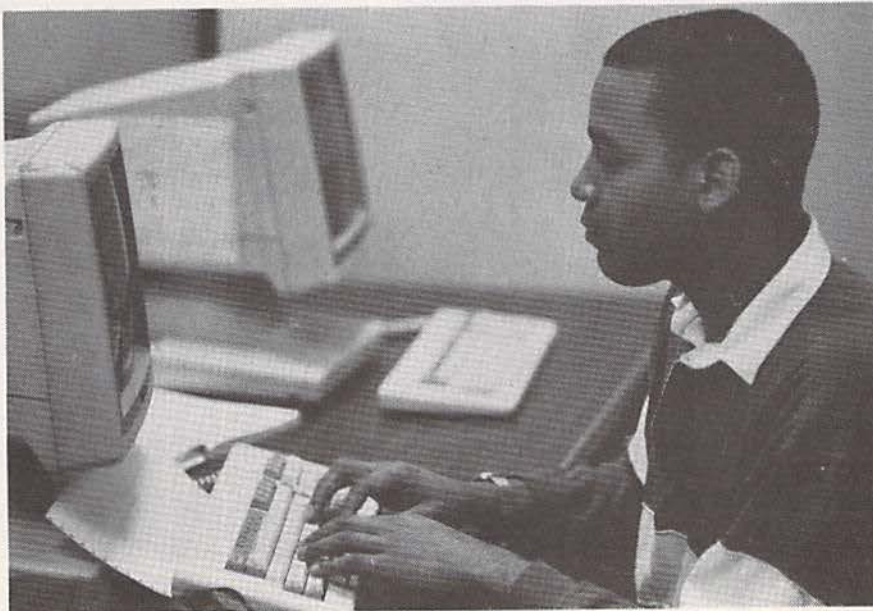
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### Faculty

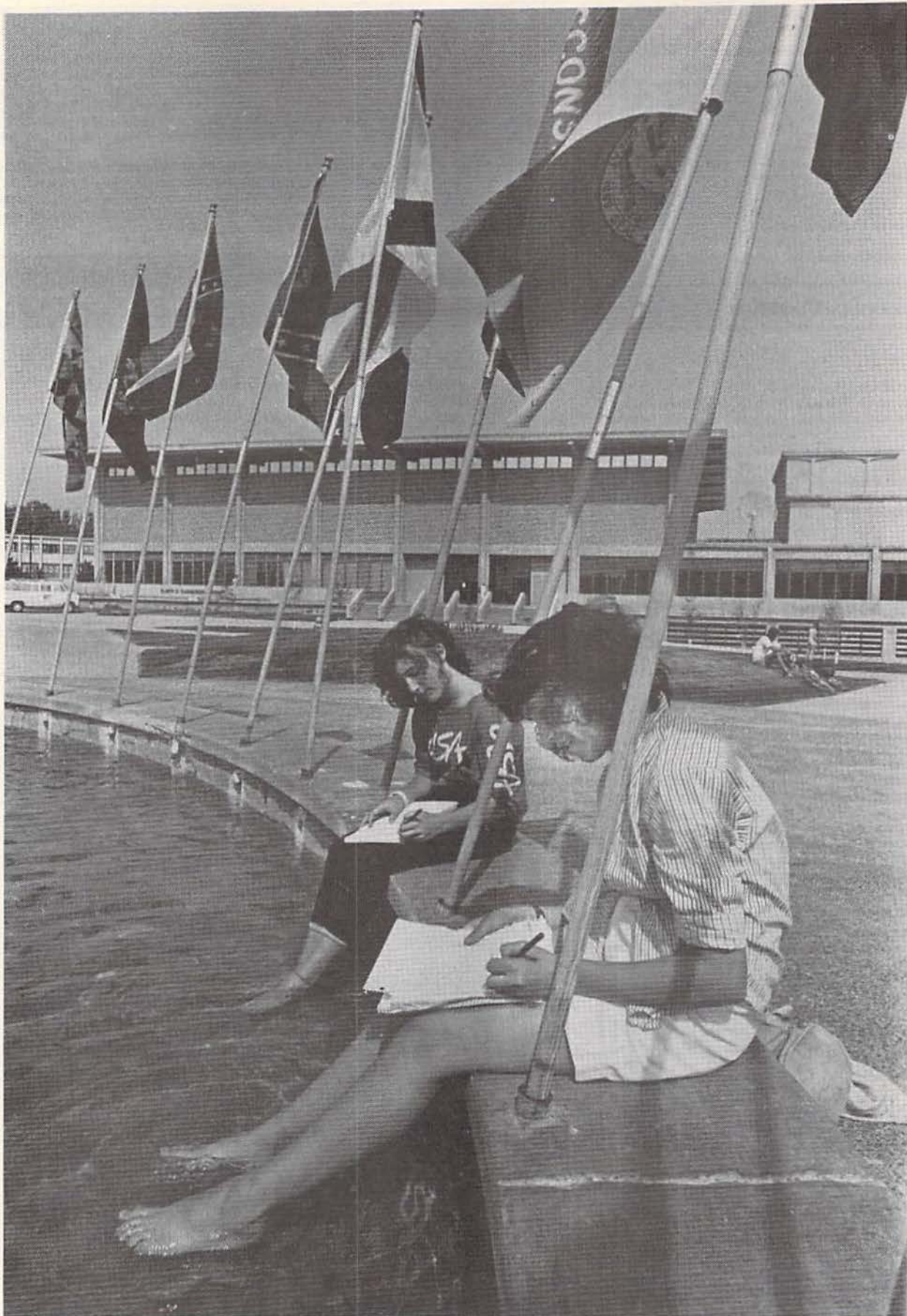
*Department Head and Associate Professor:* Russell D. Ostermann  
*Professor:* G.D. Sharma  
*Associate Professor:* S. Godbole  
*Assistant Professor:* K. Dehghani, V. Kamath, D. Ogbe

### Degrees

Petroleum Engineering, B.S., M.S.



Cory Rogers, a student in the School of Career and Continuing Education, uses the VAX computer lab in the library.



The fountain of flags, located in the heart of campus, is a favorite spot for tourists and summer students to relax.

# Degrees and Programs

**cert**—certificate

**A.A.**—Associate of Arts  
**A.A.S.**—Associate of Applied Science  
**B.A.**—Bachelor of Arts  
**B.B.A.**—Bachelor of Business Administration  
**B.Ed.**—Bachelor of Education  
**B.F.A.**—Bachelor of Fine Arts  
**B.M.**—Bachelor of Music  
**B.S.**—Bachelor of Science  
**B.T.**—Bachelor of Technology  
**Ed.S.**—Educational Specialist  
**E.M.**—Engineer of Mines  
**M.A.**—Master of Arts  
**M.F.A.**—Master of Fine Arts  
**M.S.**—Master of Science  
**M.A.T.**—Master of Arts in Teaching  
**M.B.A.**—Master of Business Administration  
**M.C.E.**—Master of Civil Engineering  
**M.Ed.**—Master of Education  
**M.E.E.**—Master of Electrical Engineering  
**Ph.D.**—Doctor of Philosophy

**Accounting, B.B.A.**  
*(see also Applied Accounting)*  
**Airframe and Powerplant, cert., A.A.S.**  
**Alaska Native Languages (minor only)**  
**Alaska Native Studies, B.A.**  
**Anthropology, B.A., B.S., M.A.**  
**Applied Accounting, A.A.S.**  
**Applied General Business, A.A.S.**  
**Applied Business, A.A.S.**  
**Applied Mining Technology, cert**  
**Applied Physics, B.S.**  
**Arctic Engineering, M.S.**  
**Art, B.A., B.F.A.**  
**Asian Studies (minor only)**  
**Associate of Arts, A.A.**  
**Athletic Coaching (minor only)**  
**Atmospheric Sciences, M.S., Ph.D.**  
**Aviation, A.A.S.**

**Biological Sciences, B.A., B.S.**  
**Biology, M.S., M.A.T., Ph.D.**  
**Botany, M.S.**  
**Business Administration, B.B.A.**  
 Finance  
 International Business  
 Management  
 Marketing  
 Travel Industry Management  
**Business Administration, M.B.A.**  
*(see also Applied Business)*

**Chemistry, B.A., B.S., M.A., M.S., M.A.T.**  
**Citizens' Law (minor only)**  
**Civil Engineering, B.S., M.C.E., M.S.**  
**College Student Personnel Administration, M.Ed.**  
**Community Health Practitioner, cert., A.A.S.**  
**Community Psychology, M.A.**  
**Computer Information Systems (minor only)**  
**Computer Science, B.S., M.S.**  
**Creative Writing, M.F.A.**  
**Culinary Arts, A.A.S.**

**Diesel/Heavy Equipment Mechanics, cert.**  
**Drafting Technology, cert.**

**Early Childhood Development, cert., A.A.S.**  
**Early Childhood Education, A.A.S.**  
**Earth Science, B.A.**  
**Economics, B.A., B.B.A.**  
**Education, B.Ed.**  
 Elementary  
 Secondary  
**Education, B.T.**  
 Secondary  
**Education, Ed.S.**  
 Cross-Cultural Studies  
 Public School Administration  
**Education, M.Ed.**  
 Cross-Cultural  
 Curriculum and Instruction  
 Educational Leadership  
 Language and Literacy  
**Electrical Engineering, B.S., M.S., M.E.E.**  
**Engineering Management, M.S.**  
**English, B.A.**  
 Forms and Techniques of Writing  
 Literature  
 Teaching  
**English, M.A.**  
**Environmental Quality Engineering, M.S.**  
**Environmental Quality Science, M.S.**  
**Eskimo, B.A.**  
 Inupiaq Eskimo  
 Yupik Eskimo

**Financial Institutions Management, A.A.S.**  
**Fisheries Science, B.S.**  
 Research  
 Management  
**Fisheries Science, M.S.**  
**Foreign Languages, B.A.**  
 French  
 German  
 Russian  
 Spanish

**General Science, B.S., M.S.**  
**Geography, B.A., B.S.**  
**Geography and Regional Development, B.A.**  
**Geological Engineering, B.S., M.S.**  
**Geology, B.S.**  
 Economic Geology  
 General Geology  
 Petroleum Geology  
 Solid Earth Geophysics  
**Geology, M.A.T.**  
**Geology, M.S.**  
 Economic Geology  
 General Geology  
 Petroleum Geology  
**Geology, Ph.D.**  
**Geophysics, M.S.**  
 Snow, Ice and Permafrost  
 Geophysics  
 Solid Earth Geophysics  
**Geophysics, Ph.D.**  
**Guidance and Counseling, M.Ed.**  
 Elementary  
 Secondary

**History, B.A., M.A.T.**  
**Humanities, B.A.**  
**Human Services, B.A.**

**Interdisciplinary Studies Option, B.A., B.S., M.A., M.S., Ph.D.**

**Journalism, B.A.**  
 Broadcast  
 News-Editorial  
**Justice, B.A.**

**Linguistics, B.A.**

**Marine Biology, M.S.**  
**Mathematics, B.A., B.S., M.S., M.A.T., Ph.D.**  
**Mechanical Engineering, B.S., M.S.**  
**Military Science/Army ROTC (minor only)**  
**Mineral Preparation Engineering, M.S.**  
**Mining Engineering, B.S., M.S., E.M.**  
*(see also Applied Mining Technology)*  
**Music, B.A.**  
**Music, B.M.**  
 Music Education  
 Performance  
**Music, M.A.**  
 Alaska Ethnomusicology  
 Music Education  
 Music History  
 Performance  
 Theory/Composition  
**Music, M.A.T.**

**Natural Resources Management, B.S.**  
 Agriculture  
 Forestry  
**Natural Resources Management, M.S.**  
**Northern Studies, B.A.**

**Oceanography, M.S., Ph.D.**  
**Office Professions, cert., A.A.S.**

**Paraprofessional Counseling, A.A.S.**  
**Petroleum Engineering, B.S., M.S.**  
**Philosophy, B.A.**  
**Physical Education, B.A., B.S.**  
**Physics, B.A., B.S., M.S., M.A.T., Ph.D.**

**Political Science, B.A.**  
**Psychology, B.A., B.S.**  
**Public Safety-Fire Science, cert., A.A.S.**  
**Public Safety-Justice, A.A.S.**

**Resource Economics, M.S.**  
**Rural Development, B.A.**  
 Applied Land Management  
 Community Organizations and Services  
 Community Research and Cultural Documentation  
 Local Government Administration  
 Village Corporation Management  
**Russian Studies, B.A.**

**Science Management, M.S.**  
**Social Work, B.A.**  
**Sociology, B.A., B.S.**  
**Space Physics, M.S., Ph.D.**  
**Speech Communication, B.A.**  
**Statistics, B.S.**

**Theater, B.A.**

**Wildlife Management, B.S.**  
 Management Biology  
 Research Biology  
**Wildlife Management, M.S., Ph.D.**

**Zoology, M.S., Ph.D.**

## Accounting

### School of Management Department of Accounting

Degree: B.B.A.

Minimum Requirements for Degree: 130 credits

The accounting department offers an extensive program for those interested in the fields 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.

### Requirements

#### Accounting — B.B.A. Degree

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

2. Complete the following statistics requirements:

Econ. 226 — Intro. to Statistics for Economics and Business .....	3
Econ. 227 — Intermediate Statistics for Economics and Business.....	3

3. Complete the following program (major) requirements:

Common Body of Knowledge Requirements	Credits
Acct. 101, 102 — Elementary Accounting .....	6
Acct. 316 — Acct. Information Systems .....	3
B.A. 101 — Intro. to Management Information Systems.....	3
B.A. 325 — Financial Management.....	3
B.A. 331 — Business and Law.....	3
B.A. 343 — Principles of Marketing.....	3
Econ. 324 or 350 — Intermediate Macroeconomics/ Money & Banking .....	3
B.A. 360 — Operations Management.....	3
B.A. 390 — Organizational Behavior.....	3
B.A. 462 — Administrative Policy .....	3

#### Accounting — General Requirements

Econ. 321 — Intermediate Microeconomics .....	3
B.A. 332 — Advanced Topics in Business and Law .....	3

#### Accounting — Major Requirements

Acct. 310 — Income Tax .....	3
Acct. 342 — Managerial Cost Accounting.....	3
Acct. 361, 362 — Intermediate Accounting.....	6
Acct. 401 — Advanced Accounting.....	3
Acct. 404 — Controllship and International Accounting.....	3
Acct. 452 — Auditing .....	3
Two of the following:	
Acct. 403 — Advanced Taxes .....	3
Acct. 405 — Contemp. Issues in Accounting .....	3
Acct. 472 — Computer Control and Adv. Auditing .....	3
Acct. 473 — Applied Systems Design .....	3

Free Electives .....

(of which a maximum of 3 credits may be taken in accounting and 6 credits in business administration or economics.)

4. Minimum credits required..... 130

#### MINOR in Accounting:

	Credits
Acct. 101 — Elementary Accounting.....	3
Acct. 102 — Elementary Accounting.....	3
Acct. 310 — Income Tax .....	3
Acct. 361 — Intermediate Accounting.....	3
Acct. 342 — Managerial Cost Accounting.....	3
Another 300- or 400-level accounting course .....	3

## Airframe and Powerplant

### School of Career and Continuing Education Trade and Industry Department

Certificate in Airframe and Powerplant; Degree: A.A.S.

Minimum Requirements for Degree — 60 credits; for 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 adviser.

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 degree requirements:

Written Communications.....	6
(Engl. 111 required)	
Oral Communications .....	3
Select a total of 6 credits from the following areas:	
Humanities or	
Social Science or	
Math or	
Natural Science .....	6
Subtotal.....	15

2. Complete the following major degree requirements:

Same as Airframe and Powerplant Certificate Program .....	49
Degree Total	64

#### 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 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 qualifies program graduates for entry level positions in the maintenance, repair, overhaul and modification of aircraft.

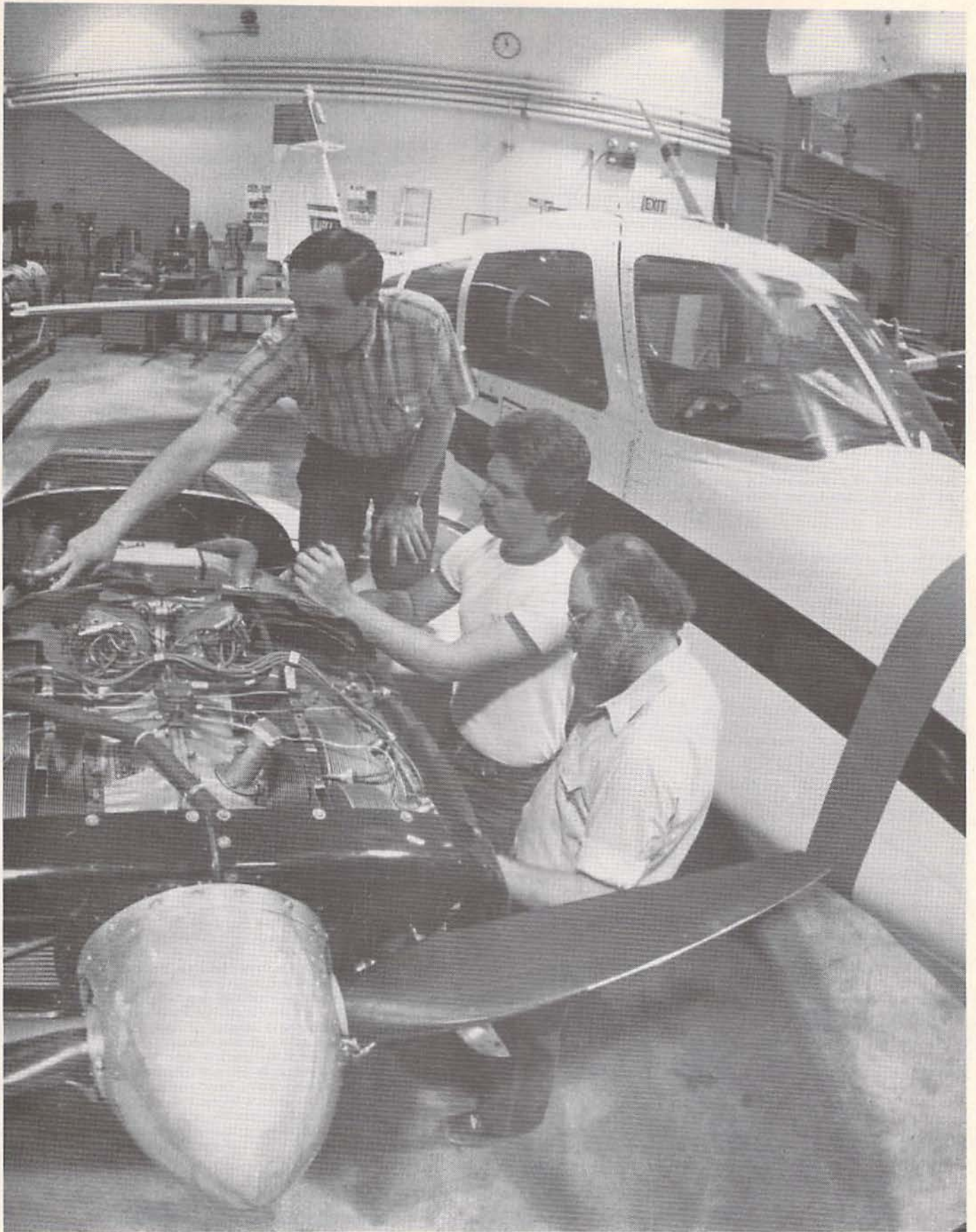
NOTE: All courses are scheduled between 7:40 a.m. and 4:10 p.m. Monday through Friday.

#### Airframe and Powerplant Certificate Program and Suggested Course Sequence

Summer Semester	Credits
AFPM 145 — Basic Mathematics .....	1.0
AFPM 146 — Basic Electricity.....	2.0
AFPM 147 — Physics for Mechanics .....	0.5
AFPM 148 — Aircraft Drawing .....	1.0
AFPM 149 — Fluid Lines and Fitting .....	0.5
AFPM 150 — Materials and Processes.....	2.0
AFPM 151 — Cleaning and Corrosion Control.....	1.0
AFPM 152 — Federal Aviation Regulations .....	1.0
AFPM 153 — Weight and Balance .....	1.0
AFPM 154 — Aircraft Ground Operations and Servicing .....	0.5
AFPM 251 — Fuel Systems.....	1.5
AFPM 255 — Fire Protection Systems.....	0.5
AFPM 257 — Instrument Systems .....	0.5
Total	13.0

Fall Semester	Credits
AFPM 231 — Powerplant Electrical Systems .....	1.5
AFPM 235 — Aircraft Reciprocating Engines.....	5.0
AFPM 240 — Turbine Engines .....	1.5
AFPM 250 — Powerplant Exhaust Systems.....	0.5
AFPM 254 — Ice and Rain Control Systems .....	0.5
AFPM 256 — Communication/Navigation Systems .....	0.5
AFPM 258 — Cabin Atmosphere Control Systems .....	1.0
AFPM 259 — Hydraulic and Pneumatic Systems .....	1.5
AFPM 261 — Wood Structures.....	0.5
AFPM 264 — Sheet Metal Structures .....	3.5
AFPM 265 — Aircraft Welding.....	1.5
Total	17.5

Spring Semester	Credits
AFPM 230 — Aircraft Electrical Systems.....	2.5
AFPM 244 — Lubrication Systems .....	1.5
AFPM 245 — Ignition Systems .....	2.5
AFPM 246 — Fuel Metering Systems .....	1.5
AFPM 248 — Induction Systems.....	0.5
AFPM 249 — Powerplant Cooling Systems .....	0.5
AFPM 252 — Propellers .....	2.0
AFPM 253 — Position and Warning Systems .....	0.5
AFPM 260 — Aircraft Landing Gear Systems .....	2.0
AFPM 262 — Aircraft Coverings.....	1.0
AFPM 263 — Aircraft Finishes.....	0.5



Arvid Weflen, (left) assistant professor in the School of Career and Continuing Education, explains the fuel system of a school-owned plane to several students. From left are Weflen, Duane Davis and Ron Hunemuller.



AFPM 266 — Assembly and Rigging .....	1.5
AFPM 267 — Airframe Inspections .....	0.5
AFPM 270 — Airframe Testing .....	0.5
AFPM 271 — Powerplant Inspections .....	0.5
AFPM 272 — Powerplant Testing .....	0.5
Total .....	18.5
Certificate Total 49.0	

#### 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

Summer Semester	Credits
AFPM 145 — Basic Mathematics .....	1.0
AFPM 146 — Basic Electricity .....	2.0
AFPM 147 — Physics for Mechanics .....	0.5
AFPM 148 — Aircraft Drawing .....	1.0
AFPM 149 — Fluid Lines and Fitting .....	0.5
AFPM 150 — Materials and Processes .....	2.0
AFPM 151 — Cleaning and Corrosion Control .....	1.0
AFPM 152 — Federal Aviation Regulations .....	1.0
AFPM 153 — Weight and Balance .....	1.0
AFPM 154 — Aircraft Ground Operations and Servicing .....	0.5
AFPM 251 — Fuel Systems .....	1.5
AFPM 255 — Fire Protection Systems .....	0.5
AFPM 257 — Instrument Systems .....	0.5
Total .....	13.0

Fall Semester	Credits
AFPM 254 — Ice and Rain Control Systems .....	0.5
AFPM 256 — Communication/Navigation Systems .....	0.5
AFPM 258 — Cabin Atmosphere Control Systems .....	1.0
AFPM 259 — Hydraulic and Pneumatic Systems .....	1.5
AFPM 261 — Wood Structures .....	0.5
AFPM 264 — Sheet Metal Structures .....	3.5
AFPM 265 — Aircraft Welding .....	1.5
Total .....	9.0

Spring Semester	Credits
AFPM 230 — Aircraft Electrical Systems .....	2.5
AFPM 253 — Position and Warning Systems .....	0.5
AFPM 260 — Aircraft Landing Gear Systems .....	2.0
AFPM 262 — Aircraft Coverings .....	1.0
AFPM 263 — Aircraft Finishes .....	0.5
AFPM 266 — Assembly and Rigging .....	1.5
AFPM 267 — Aircraft Inspections .....	0.5
AFPM 270 — Airframe Testing .....	0.5
Total .....	9.0
Certificate Total 31.0	

#### 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

Summer Semester	Credits
AFPM 145 — Basic Mathematics .....	1.0
AFPM 146 — Basic Electricity .....	2.0
AFPM 147 — Physics for Mechanics .....	0.5
AFPM 148 — Aircraft Drawing .....	1.0
AFPM 149 — Fluid Lines and Fitting .....	0.5
AFPM 150 — Materials and Processes .....	2.0
AFPM 151 — Cleaning and Corrosion Control .....	1.0
AFPM 152 — Federal Aviation Regulations .....	1.0
AFPM 153 — Weight and Balance .....	1.0
AFPM 154 — Aircraft Ground Operations and Servicing .....	0.5
AFPM 251 — Fuel Systems .....	1.5
AFPM 255 — Fire Protection Systems .....	0.5
AFPM 257 — Instrument Systems .....	0.5
Total .....	13.0

Fall Semester	Credits
AFPM 231 — Powerplant Electrical Systems .....	1.5
AFPM 235 — Aircraft Reciprocating Engines .....	5.0
AFPM 240 — Turbine Engines .....	1.5
AFPM 250 — Powerplant Exhaust Systems .....	0.5
Total .....	8.5

Spring Semester	Credits
AFPM 244 — Lubrication Systems .....	1
AFPM 245 — Ignition Systems .....	2.5
AFPM 246 — Fuel Metering Systems .....	1.5
AFPM 248 — Induction Systems .....	0.5
AFPM 249 — Powerplant Cooling Systems .....	0.5
AFPM 252 — Propellers .....	2.0
AFPM 271 — Powerplant Inspections .....	0.5
AFPM 272 — Powerplant Testing .....	0.5
Total .....	9.5
Certificate Total 31.0	

#### Evening Airframe and Powerplant Program

The evening airframe and powerplant program, offered alternate years, 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/or 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 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.

Alternate Fall Semester	Credits
AFPM 111 — Basic Airframe and Powerplant .....	4
AFPM 205 — Fundamentals of Airframe Structures .....	5
AFPM 206 — Fundamentals of Airframe Systems and Components .....	3
Total .....	12

Alternate Spring Semester	Credits
AFPM 215 — Powerplant Theory and Maintenance .....	6
AFPM 216 — Powerplant Structures and Systems .....	6
Total .....	12
Evening Program Total 24	

## Alaska Native Languages

### College of Liberal Arts

#### Department of Alaska Native Languages

##### Minor only

There are 20 different Alaska Native languages: Aleut, Alutiiq (also called Aleut or Sugpiaq), Central Yupik Eskimo, St. Lawrence Island Eskimo, Inupiaq Eskimo, Tsimshian, Haida, Tlingit, 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 Yupik 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 Koyukon 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

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 has been principally 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. Only under special circumstances reviewed by the head of the program will students be advised to consider Native studies as a sole major, and they will be required to have a substantial minor in a specialized discipline.

### Requirements

#### Alaska Native Studies — B.A. Degree

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

2. Complete the following program (major) requirements:

<b>Prerequisites</b>	<b>15 Credits</b>
ANL 215 — Eskimo-Aleut Languages or ANL 216 — Indian Languages of Alaska	3
ANS 120 — Cultural Differences in Institutional Settings	3
Anth. 242 — Native Cultures of Alaska	3
Hist. 110 — History of Alaska Natives	3
P.S. 263 — Alaska Native Politics	3

<b>Core Courses:</b>	<b>18 Credits</b>
A. Complete the following required courses (9 credits):	
ANS 310 — The Political Economy of ANCSA	3
ANS 320 — Language and Ethnicity: Applications to Alaska	3
ANS 415 — Comparative Economic Development Processes: Applications for Native Alaska	3

B. Complete 9 credits of the following:

	<b>Credits</b>
ANS 251 — Practicum in Native Cultural Expression	1-3
ANS 301 — Native Cultural Heritage Documentation	3
ANS 375 — Native American Religion and Philosophy	3
ANS 425 — Federal Indian Law and Alaska Natives	3
ANS 430 — Alaska Native Education	3
ANS 475 — Alaska Native Social Change	3
Art 365 — Native Arts of Alaska	3
Engl. 349 — Narrative Art of Alaska Native Peoples (In English Translation)	3
Mus. 223 — Native Alaskan Music	3
Soc. 408 — American Minority Groups	3
3. Minimum Credits Required	130

#### MINOR in Alaska Native Studies

A minor requires a minimum of 15 credits in Alaska Native studies. All minor programs must be approved by the head, Alaska Native studies.

## Anthropology

### College of Liberal Arts

#### Department of Anthropology

Degrees: B.A., B.S., M.A.

Minimum Requirements for Degrees: B.A. — 130 credits; B.S. — 130 credits; M.A. — 30 additional credits

The anthropology program offers a balanced and flexible program of academic courses and research opportunities in cultural anthropology, archeology, 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. Archeological 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:

	<b>Credits</b>
Anth. 200 — Social/Cultural Anthropology	3
Anth. 211 — Fundamentals of Archeology	3
Anth. 222 — Human Evolution	3
Anth. 210 or 212 or 323 — New World or Old World Prehistory or Archeology of China	3
Anth. 315 or 321 — Human Biology or Human Population Biology	3
Anth 329 or 380 or 381 or 382 or 383 — Peoples of the Russian North or People of the Alaskan SW or the Inupiaq and Yup'ik Peoples or Peoples of the Alaskan SE or Athabaskan Peoples	3 or 4
Anth. 410 — History of Social/Cultural Anthropology	3
Approved* open program electives at 200 level or above	12
*For example, Anth. 413 and 461 are recommended for those interested in archaeology, as is fieldwork experience.	
Courses outside departmental offerings:	
Ling. 101 — Nature of Language	3
An approved Statistics course	3
3. Minimum credits required	130

#### MINOR in Anthropology:

A minor in anthropology requires 18 hours in anthropology, including 15 from the core and 400-level courses, and 3 from Anth. 101 or 102.

#### 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 undergraduate 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.

The program offers two options — a thesis track and a non-thesis (research paper) track. The choice of option is guided by the student's interests and goals, the graduate advisory committee, and the requirements of the university.

#### Degree Requirements for all graduate students:

1. A student must complete the general university requirements for the master's degree.
2. A student must pass a written examination in anthropology. Each student is expected to take the examination during the second year in the program.
3. A graduate advisory committee is to be established beginning in the first semester of admission in the program. The committee of three UAF faculty must include at least two members of the department (in the subfield of student interest, if available) and the chair must be a member of the department as well as in the subfield of the student's interest. The student is expected to meet at least twice during each semester with the committee.
4. The need for a language requirement or a suitable substitute shall be determined by the student and his/her advisory committee.
5. Required courses which all graduate students enrolled in the program must complete with a grade of B or above are:

	<b>Credits</b>
Anth. 601 — Proseminar in Social/Cultural Anthropology	3
Anth. 611 — Proseminar in Archeology	3
Anth. 621 — Proseminar in Physical Anthropology	3
5a. Anth. 600 — Anthropology Colloquium	0
All graduate students in residence are required to attend and participate in the Departmental colloquium.	
6a. Thesis Track: Core requirements outlined above to be included in a program of at least 30 hours of study; 24 hours must be regular coursework (not research or thesis) and 21 of these must be at the 600 level, plus six (6) hours of thesis (Anth. 699).	
6b. Non-Thesis Track with a Research Paper: at least 36 hours, including at least 30 hours of regular coursework (including the core requirements), with 24 of these at the 600 level. A maximum of six (6) hours may be devoted to research (Anth. 698). The student must complete a	

research paper in proper style which the advisory committee judges to be of publishable quality.

7. The student must have at least one course in statistics (which may be part of the undergraduate record).

8. All students must have fieldwork and laboratory experience appropriate to the discipline or subdiscipline.

#### Interdisciplinary Ph.D. Emphasizing Anthropology

Students may develop an interdisciplinary Ph.D. with an emphasis in several areas of anthropology: Alaskan archaeology; Quarternary studies; contemporary Alaska Native studies. For further information contact the Head of the Department of Anthropology and refer to information elsewhere in this catalog which deals with Interdisciplinary Degrees.

## Applied Accounting

### School of Career and Continuing Education Business Systems and Technology Department

Degree: A.A.S.

Minimum Requirements for Degree: 60 credits

The applied accounting program prepares students for entry-level accounting positions in payables and/or 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 degree requirements:

Written Communications.....	6
(Engl. 111 required)	
Oral Communications.....	3
Select a total of 6 credits from the following areas:	
Humanities or	
Social Science or	
Math or	
Natural Science.....	6
Subtotal.....	15

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 257 — Accounts Receivable Management.....	1
ABUS 258 — Purchasing and Cost Control.....	1
ABUS 270 — Financial Statement Ratio Analysis.....	2
B.A. 151 — Introduction to Business.....	3
ABUS 179 — Fundamentals of Supervision.....	3
ABUS 240 — Business Law.....	3
ABUS 155 — Business Math.....	2
CAPS 150 — Computer Business Applications.....	3
Subtotal.....	37

3. Complete a total of 8 general electives credits..... 8

Degree Total..... 60

A calculating machines proficiency exam must be passed to complete degree requirements.

## Applied Business

### School of Career and Continuing Education Business Systems and Technology Department

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 degree requirements:

Written Communications.....	6
(Engl. 111 required)	
Oral Communications.....	3
Select a total of 6 credits from the following areas:	
Humanities or	
Social Science or	
Math or	
Natural Science.....	6
Subtotal.....	15

2. Complete the following major degree requirements:

Acct. 101 — Elementary Accounting.....	3
Acct. 102 — Elementary Accounting.....	3
B.A. 151 — Introduction to Business.....	3
ABUS 154 — Human Relations.....	3
ABUS 241 — Business Law.....	3
CAPS 150 — Computer Business Applications.....	3
Economics.....	3
ABUS 155 — Business Math.....	2
OP 231 — Business Communications.....	3
Subtotal.....	26

3. Complete the following major specialty electives:

Select 15 credits from the following:

ABUS 221 — Microcomputer Accounting.....	3
ABUS 179 — Fundamentals of Supervision.....	3
ABUS 231 — Introduction to Personnel.....	3
ABUS 253 — Principles of Retailing.....	3
ABUS 254 — Salesmanship.....	3
ABUS 273 — Managing a Small Business.....	3
ABUS 130 — Real Estate.....	3
ABUS 160 — Principles of Banking.....	3
ABUS 261 — Analyzing Financial Statements.....	3
ABUS 180 — Commercial Lending.....	3
ABUS 224 — Money and Banking.....	3
or any other ABUS, B.A. or Acct. courses.	
Subtotal.....	15

4. Complete a total of 4 general electives credits..... 4

Degree Total..... 60

A calculating machines proficiency exam must be passed to complete degree requirements.

## Applied General Business

### Rural College

### Northwest Campus

Degree: A.A.S.

Minimum Requirements for Degree: 60 credits

### Requirements

#### Applied General Business — A.A.S. Degree

1. Complete the following general degree requirements:

Written Communications.....	6
Oral Communication.....	3
Sciences, Humanities,	
Social Science.....	6

2. Complete the following Applied Studies courses:

Acct. 101 and 102 — Elementary Accounting.....	6
B.A. 151 — Introduction to Business.....	3
B.A. 100 — Introduction to Data Processing and BASIC.....	3
ABUS 250 — Introduction to Managerial Accounting.....	3
Econ. 201 — Principles of Economics-Micro.....	3
ABUS 241 — Business Law I.....	3
ABUS 179 — Fundamentals of Supervision.....	3
ABUS 232 — Fundamentals of Management.....	3
ABUS 233 — Financial Management.....	3

3. Electives..... 15

Degree Total..... 60

## Applied Mining Technology

### School of Career and Continuing Education Trade and Industry Department

#### Certificate

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

##### 1. Complete the following major specialty courses:

Min. 101 — Minerals, Man and the Environment.....	3
AMIT 101 — General Mining Technology or Geos. 101 — General Geology.....	4
AMIT 109 — Underground Mine Safety.....	2
AMIT 110 — New Underground Miner Training.....	2
AMIT 120 — Explosives I.....	2
AMIT 125 — Mineral Exploration Techniques.....	3
AMIT 129 — Surface Mining Safety.....	1
AMIT 130 — Surface Mining Operations.....	2
AMIT 140 — Environmental Permitting.....	1
AMIT 170 — Fundamentals of Coal Mining.....	3
Subtotal.....	23

##### 2. Select 4 credits from the following major specialty electives

AMIT 151 — Settling Pond Technology.....	1
AMIT 152 — Techniques of Fire Assay.....	1
AMIT 153 — Laboratory Analysis.....	1
AMIT 154 — Water Quality and Flocculents.....	1
AMIT 155 — Drilling Technology.....	1
AMIT 156 — Applied Cartography.....	1
AMIT 161 — Alaskan Ore Deposits.....	1
AMIT 162 — Geochemical Sampling.....	1
AMIT 180 — Colored Stone Evaluation I.....	3
AMIT 185 — Diamond Grading and Evaluation.....	3
AMIT 193 — Special Topics Course.....	1-3
AMIT 205 — Geomagnetic Surveying.....	1
AMIT 206 — Electromagnetic Surveying.....	1
AMIT 210 — Advanced Underground Mining.....	2
AMIT 220 — Explosives II.....	1
AMIT 230 — Field Methods.....	2
AMIT 231 — Heap Leaching.....	1
AMIT 280 — Colored Stone Evaluation II.....	3
AMIT 282 — Cooperative Work Experience.....	2
AVTY 231 — Arctic Survival.....	3
H.S. 120 — Industrial First Aid and CPR.....	1
Any approved Applied Business, Computer Application, Drafting Technology, 100 level or above university science course, Mechanics, Welding, or School of Mineral Engineering course. NOTE: Only a maximum of 3 approved elective credits can be taken which must be approved in advance (in writing) by the adviser of the Mining Technol- ogy Program.....	3
Subtotal.....	4
Certificate total.....	30

## Applied Physics

### College of Natural Science Department of Physics

#### 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

\*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

#### Degree: M.S.

Minimum Requirements for Degree: 30 credits (beyond Bachelors Degree in Engineering)

The arctic engineering program, administered by the civil engineering department in cooperation with the Department of Mechanical Engineering, is designed to provide training for graduate engineers who must deal with the unique challenge 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. Of primary importance is a thorough understanding of heat transfer processes. In addition, properties of frozen ground and frozen water are basic to most engineering activities in the Arctic. The areas of hydraulics, hydrology and utility operations are also uniquely affected by arctic considerations. The arctic engineering program requires a set of core courses that will prepare an engineer to understand and adapt to cold regions problems and also allows the student to round out the program with elective advanced courses in his/her particular field of interest. Arctic engineering research activities carried out by faculty associated with this program can provide opportunities for theses or project papers dealing with the most current arctic knowledge.

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.

### Requirements

#### Arctic Engineering — M.S. Degree

1. Complete the general university requirements and master's degree requirements.

2. Complete the following degree program:

A. Core Courses: (Minimum of 15 credits)	Credits
C.E. 681 — Frozen Ground Engineering.....	3
C.E. 682 — Ice Engineering or Geos. 615 — Sea Ice.....	3
C.E. 683 — Arctic Hydrology and Hydraulic Engineering.....	3
C.E. 684 — Arctic Utility Distribution.....	3
M.E. 685 — Arctic Heat and Mass Transfer.....	3
M.E. 687 — Arctic Materials Engineering.....	3

B. C.E. 699 or M.E. 699 — Thesis or Project..... 3

Electives: 12 credits in areas related to or supportive of the student's degree program and approved by the student's graduate committee.

3. At least 24 credits, including thesis and/or research, must be at the 600 level.

Note: C.E. 603, Arctic Engineering is not an approved elective for an M.S. in Arctic Engineering.

## Art

### College of Liberal Arts Department of Art

#### 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.

## Requirements

### Art — B.A. Degree

1. Complete general university requirements and B.A. degree requirements.
2. Complete the following program (major) requirements:

A. Lower Division (27 credits)	Credits
Art 105 — Beginning Drawing.....	3
Art 205 — Intermediate Drawing.....	3
Art 161, 162 or 163 — Design and Color Theory.....	6
(2 out of 3 courses)	
Art 261-262 — History of World Art.....	6
Art 211 — Beginning Sculpture.....	3
Art 213 — Beginning Oil Painting.....	3
One elective chosen from:.....	3
Art 201 — Beginning Ceramics	
Art 207 — Beginning Printmaking	
Art 209 — Beginning Metalsmithing	
<b>B. Upper Division (12 credits)</b>	
Nine (9) credits in upper-division courses in one subject area, selected from one of these major concentrations:.....	
Drawing Sculpture	9
Painting Ceramics	
Printmaking Metalsmithing	
Upper-division Art History	
or Humanities 332 or Art 365.....	3
Minimum Required Credits for major.....	39
3. Minimum Credits Required.....	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.....	3
Art 161, 162 — 2-D Design, Color and Design	
or Art 163 — 3-D Design (two of the three).....	6
Art 261, 262 — History of World Art.....	6
Art 211 — Beginning Sculpture.....	3
Art 213 — Beginning Painting.....	3
One of the following.....	3
Art 201 — Beginning Ceramics	
or Art 207 — Beginning Printmaking	
or Art 209 — Beginning Metalsmithing	
<b>B. Upper Division (45 Credits)</b>	
*Upper Division Art History.....	6
Two areas of specialization in Art:	
Major specialization.....	21
Minor specialization.....	9
Art Electives.....	6
Thesis Project.....	3
3. Minimum Credits Required.....	130

Majors available for the B.F.A. are painting, drawing, printmaking, sculpture, ceramics, and metalsmithing.

\*Humanities 332 or Art 365 may apply toward this requirement.

### MINOR in Art:

A minor in Art by non-art majors requires 12 credits of approved Art courses.

### 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

#### 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.

Asian Studies courses: Anth. 323, Hist. 121-122, 330, 331, Geog. 311; Jpn. 101-102, 201-202; Phil. 202.

## Associate of Arts

### Rural College

### Chukchi, Kuskokwim and Northwest Campuses

and

### School of Career and Continuing Education Department of Academic Programs

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

### Associate of Arts Degree

1. Complete a minimum of 60 semester credits at the 100 level or above including at least 20 at the 200 level or above.

2. Complete a minimum of 45 semester credits in the 5 areas below with no less than 9 credits in each:

Written Communication.....	6
Oral Communication.....	3
Math/Natural Science.....	9
Humanities.....	9
Social Science.....	9
Applied Studies.....	9
Subtotal.....	45
3. Electives.....	15
Total.....	60

### Course Classifications

Subjects and courses that may be used to satisfy general requirements are classified as follows:

#### Humanities:

Alaska Native Language, Art, Foreign Language, History\*, Humanities, Journalism, Languages, Linguistics, Literature, Philosophy, Music, Speech and Public Communications and Theater.

#### Mathematics and Logic:

Logic, Mathematics and Statistics. *Natural Sciences:*

Biological Sciences, Biology, Chemistry, Geology, Physical Anthropology, Physical Geology, Physical Sciences and Physics.

#### Applied Studies:

Agriculture, Airframe and Powerplant, Alaska Studies, Applied Accounting, Applied Business, Aviation, Computer Applications, Construction Technology, Culinary Arts, Diesel/Heavy Equipment, Drafting Technology, Early Childhood Development, Education, Electronics, Emergency Medical Training, Fire Science, Fisheries/Wildlife Management, Home Economics, Justice, Library Science, Management, Mechanics, Military Science, Mining Technology, Nursing/Health Science, Nutrition, Office Professions, Paraprofessional Counseling, Personal Development, Petroleum, Physical Education/Recreation, Public Safety (including corrections, fire science, justice, law and police administration), Trade and Technology, Waste Water Technology and Welding.

#### Social Sciences:

Anthropology, Behavioral Science, Business Law, Counseling, Economics, Geography, History\*, Political Science, Psychology and Sociology.

\*History applies to the social science classification only for bachelor's degrees.

## Athletic Coaching

College of Liberal Arts  
Department of Physical Education

### Minor only

A minor in athletic coaching (18 credits) is available for those students more interested in the coaching of athletic teams, in schools or communities, than in the more general discipline of physical education.

## Requirements

### MINOR in Athletic Coaching

	Credits
1. Complete the following required courses:	
P.E. 411 — History and Philosophy of Sport and Physical Activity ...	3
P.E. 412 — Principles and Problems in Athletic Coaching .....	3
P.E. 421 — Physiology of Exercise .....	3
P.E. 432 — Biomechanics of Human Performance .....	3
P.E. 440 — Prevention and Care of Athletic Injuries .....	3
2. Complete the remaining credits in approved courses which will develop competency in the area selected for coaching .....	3

(Note: This minor is not available to the physical education major.)

## Atmospheric Sciences

College of Natural Sciences  
Department of Physics

Degrees: M.S., Ph.D.  
Minimum Requirements for Degrees: M.S., 30 additional credits;  
Ph.D., — no fixed credits

## Requirements

### Atmospheric Sciences — M.S. Degree

1. Complete the general university requirements and the master's degree requirements.
2. Complete required program as arranged by conference with the graduate advisory committee and in accordance with the physics department *Manual of Policies and Procedures* for graduate students.

Specialization in ice and snow studies with emphasis on ice physics, ice in climate and ice in science applications is available through the Geology/Geophysics Program (see Ice and Permafrost Geophysics Option).

### Atmospheric Sciences — Ph.D. Degree

1. Complete the general university requirements and Ph.D. requirements.
2. Complete the following:

	Credits
Basic courses in atmospheric sciences .....	12
Approved physics courses (minimum) .....	12

(For specialization in ice and snow studies, see Geology/Geophysics Program, Ice and Permafrost Option.)

### Basic courses in Atmospheric Sciences:

ATM 636 — Physics of the Lower Atmosphere .....	3
ATM 646 — Dynamics of the Atmosphere and Ocean .....	3
Phys. 650 — Aeronomy .....	3
ATM 656 — Atmospheric Circulation, Weather, and Climate .....	3

### Physics Courses:

Phys. 611 — Mathematical Physics .....	3
Phys. 612 — Mathematical Physics .....	3
Phys. 621 — Classical Mechanics .....	3
Phys. 622 — Statistical Mechanics .....	3
Phys. 631 — Electromagnetic Theory .....	3
Phys. 632 — Electromagnetic Theory .....	3
Phys. 651 — Quantum Mechanics .....	3
Phys. 652 — Quantum Mechanics .....	3

(See also "Space Physics".)

## Aviation

School of Career and Continuing Education  
Trade and Industry Department

Degree: A.A.S.  
Minimum Requirements for Degree: 60 credits

## Requirements

### Aviation — A.A.S. Degree

1. Complete the following general degree requirements:

Written Communications .....	6
(Engl. 111 required)	

2. Oral Communications .....

Select a total of 6 credits from the following areas:

Humanities or	
Social Science or	
Math or	
Natural Science .....	6
Subtotal .....	15

3. Complete the following major degree requirements:

AVTY 100 — Private Pilot Ground School .....	4
AVTY 101 — Private Flying .....	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

4. 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 Skis .....	1
AVTY 109 — Glider Flight Training .....	3
AVTY 110 — Biennial Flight Review .....	1
AVTY 202 — Flight Instructor Ground School .....	3
AVTY 203 — Flight Instructor Flight Training .....	2
AVTY 205 — Instrument Flight Instructor .....	3
AVTY 206 — Transport Pilot Ground School .....	4
AVTY 207 — Transport Pilot Flight Instruction .....	2
AVTY 208 — Flight Simulator Operations .....	3
AVTY 226 — Flight Engineer Ground School .....	4
AVTY 232 — Aviation Astronomy and Navigation .....	3
AVTY 239 — Aircraft Dispatcher .....	4
FSCI 117 — Rescue Practices .....	3
Subtotal .....	15

5. General Electives .....

Degree Total .....	60
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## Biological Sciences

College of Natural Sciences  
Department of Biology and Wildlife

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

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 curricula. 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.
2. Complete the following program (major) requirements:

Biology 105-106, 210, 271, 362, and at least 16 additional credits in biology, including at least one course in botany, one in microbiology, and one in zoology.\* A majority of these additional credits in biology must be upper division (300-400) courses. A maximum of 5 credits of independent study (-97) may be applied to this requirement.

Chemistry — one year  
Mathematics — one year  
A minor in biological sciences requires 20 credits in biology, including Biol. 105-106, 271, 362 and two of the following courses:  
Biol. 210, 305, 342, Bot 239.

3. Minimum credits required..... 130

#### Biological Sciences — B.S. Degree

1. Complete the general university requirements and the B.S. degree requirements in communications and social sciences/humanities.

2. Complete the following program (major) requirements:  
Core Requirements: Biol. 105-106, 271, 342, 362, Bot. 239, Math 200 or 272, Stat. 301, Chem 105-106, 321-322, and at least two courses in addition to those listed above, chosen from Statistics, Chemistry (200 level or above), Geosciences, Mathematics (200 level or above), Physics, Oceanography, and/or Space Physics and Atmospheric Sciences. At least 21 credits in biology/botany must be upper division (300-400) level courses. A maximum of 6 credits of independent study (-97) may be applied to this requirement.

Foreign Language — one collegiate year or 6 credits of social sciences and/or humanities beyond the general requirements for the B.S. degree.

a. For Biology Option complete the following requirements in addition to the core requirements: At least one course in physiology (Biol. 210 or Bot. 416) and 17 additional credits, including one course in zoology (Biol. 222, 305, 317, or 406).\*

b. For Botany Option complete the following requirements in addition to the core requirements: At least one course each in: plant physiology (Bot. 416), zoology (Biol. 222, 305, 317, or 406), plant anatomy/morphology (Bot. 334), plant systematics, evolution and diversity (Bot. 331, Bot. 333 or Bot. 476) and plant ecology (Bot. 474). One additional upper division (300-400) level course in botany or biology (including but not restricted to Biol. 308, Bot. 331, 333, 475, 476, A.L.R. 313, 380, 411, or 451).\*

3. Minimum credits required..... 130

\*Students may petition to substitute with chemistry courses up to 7 credits in the B.A. program, 10 credits in the B.S. (Biology Option) program, or 4 credits in the B.S. (Botany Option) program, approved in advance, for the additional biology credits required for the degree.

#### Students from Other Departments

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

## Biology

### College of Natural Sciences Department of Biology and Wildlife

Degrees: M.S., M.A.T., Ph.D.  
Minimum Requirements for Degrees: M.S. — 30 or more additional credits; Ph.D. — open

#### Requirements

##### Biology — M.S. Degree

1. Complete the general university requirements and master's degree requirements.  
2. Complete a minimum of 30 credits of approved courses. At least 24 credits, including thesis and research, must be at the 600 level.  
3. Students working in subject areas involving significant non-English literature may be expected to read the appropriate foreign language.

##### Biology — M.A.T. Degree

Persons interested in this degree program should see the head of the department.

##### Biology — Ph.D. Degree

See degree requirements.

## Botany

### College of Natural Sciences Department of Biology and Wildlife

Degree: M.S.  
Minimum Requirements for Degree: M.S. — 30 additional credits

#### Requirements

##### Botany — M.S. Degree

1. Complete the general university requirements and master's degree requirements.  
2. Complete a minimum of 30 credits of approved courses. At least 24 credits, including thesis and research, must be at the 600 level.  
3. Students working in subject areas involving significant non-English literature may be expected to read the appropriate foreign language.

## Business Administration

### School of Management Department of Business Administration

Degrees: B.B.A., M.B.A.  
Minimum Requirements for Degrees: B.B.A. — 130 credits; M.B.A. — 30 additional credits.

The business administration department offers professional training in the field of management, finance, marketing and travel industry management to those individuals interested in entering industry or government upon graduation. The objective 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 major or minor who are either undecided or perhaps unclear about the nature of the various functions performed in the administration of organizations.

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

##### Business Administration — B.B.A. Degree

1. Complete general university requirements and B.B.A. degree requirements including 6 credits humanities electives (in addition to 9 credit written and oral communication requirement).  
2. Complete the following statistics requirements:

Econ. 226 — Intro. to Statistics for Economics and Business ..... 3  
Econ. 227 — Intermediate Statistics for Economics and Business..... 3

3. Complete the following *Common Body of Knowledge* requirements:

	Credits
Acct. 101 and 102 — Elementary Accounting .....	6
B.A. 101 — Intro. to Management Information Systems .....	3
B.A. 310 — Management Information Systems .....	3
B.A. 325 — Financial Management .....	3
B.A. 331 — The Legal Environment of Business .....	3
B.A. 343 — Principles of Marketing .....	3
Econ. 324 or 350 — Inter. Macroeconomics/Money & Banking .....	3
B.A. 360 — Operations Management .....	3
B.A. 390 — Organizational Behavior .....	3
B.A. 462 — Administrative Policy .....	3

4. Complete the following *Business Administration* general requirements:

	Credits
B.A. 301 — Processes of Management .....	3
B.A. 332 — Business Law .....	3
Acct. 352 — Management Accounting .....	3
Econ. 321 or 322 — Intermediate Microeconomics/Managerial Economics .....	3
B.A. 460 — International Business .....	3

5. Free Electives (Upper Division)..... 11  
(Maximum of 5 credits may be taken in School of Management, or transferred courses in Accounting, B.A., or Economics.)

## 5. Complete one of the following areas:

**Finance**

The field of finance is concerned with the raising of funds and their subsequent effective use by the organizations which require them. The student is thus concerned with understanding the condition and workings of the financial system, financial policies of industrial firms and non-profit organizations, the vitality of the securities markets, and the valuation of individual securities and portfolios.

Finance Requirements:	Credits
B.A. 423 — Investment Management.....	3
B.A. 425 — Adv. Corp. Financial Problems.....	3
B.A. 430 — Current Topics in Finance.....	3
B.A. 461 — International Finance.....	3
Upper-division electives approved in writing by major advisor.....	9

**International Business**

The interdisciplinary program in international business is designed to prepare students for careers with multinational firms, internationally oriented financial institutions, and state, national and international agencies dealing with foreign business.

International Business Requirements:	Credits
B.A. 443 — International Marketing.....	3
B.A. 461 — International Finance.....	3
Econ. 463 — International Economics.....	3
Two academic years of one foreign language.....	12-18
(German, Japanese, Russian, Spanish, French)	
P.S. 321 or 322 — International Politics.....	3
P.S. 437 — U.S. Foreign Policy.....	3
P.S. 481 — The UN, Model UN, and Intern'l Admin. (optional).....	0-1

Complete one of the following courses (appropriate to language concentration):

Geog. 305 — Geography of Europe (Except USSR) or	
Geog. 306 — Geography of the Soviet Union or	
Geog. 311 — Geography of Asia or	
Geog. 405 — Political Geography.....	3
Complete one additional history course appropriate to language concentration.....	3

(Note: Foreign language credit may also meet humanities general degree requirements. Political science credits will meet social science elective in general degree requirements. Free elective will be adjusted accordingly.)

**Management**

Management is that administrative force responsible for bringing together the diverse components of an organization in order to achieve effective performance. Administration includes the identification of objectives, the determination of policy, and implementation through strategic decision-making. Results are primarily achieved through the effective use of human resources and in a manner sensitive to the political, social, technological, and economic forces which constitute the environment.

Management Requirements:	Credits
B.A. 361 — Personnel Management.....	3
Econ. 420 — Labor/Mgmt. Relations.....	3
B.A. 456 — Small Bus. Management.....	3
B.A. 480 — Organization Theory.....	3
Upper-division electives approved in writing by major advisor.....	9

**Marketing**

Marketing encompasses all those business activities necessary for the transfer of ownership including the logistics of physical distribution. The marketing student thus needs to study the technical activities of product and market research, advertising and promotion, transportation, the structure of markets and the cultural dimensions of consumer behavior.

Marketing Requirements:	Credits
B.A. 326 — Principles of Advertising.....	3
B.A. 436 — Consumer Behavior.....	3
B.A. 441 — Promotion Management.....	3
B.A. 443 — International Marketing.....	3
B.A. 445 — Marketing Research.....	3
B.A. 483 — Marketing Management.....	3
Upper-division electives approved in writing by major advisor.....	3

**Travel Industry Management:**

The many diverse elements of the travel/tourism industry constitute a service industry encompassing the housing, feeding, entertainment, and transportation of a growing number of visitors each year. The Travel Industry Management Program combines under one management education system the several historically separate disciplines

of hotel-motel management, destination research and development, transportation, tourism management, and hospitality marketing.

Travel Industry Management Requirements:	Credits
B.A. 160 — Tourism Principles & Practices.....	3
B.A. 253 — Internship in Business.....	3
B.A. 372 — Hotel Administration.....	3
B.A. 375 — Marketing of Hospitality Service.....	3
B.A. 377 — Food and Beverage Mgt.....	3
B.A. 378 — Passenger Transportation Mgt.....	3
B.A. 465 — Tourism Destination Plan and Development.....	3
B.A. 471 — Tourism Seminar.....	3

6. Minimum credits required..... 130

**MINOR in Business Administration\*:**

Acct. 101 — Elementary Accounting.....	3
B.A. 101 — Introduction to Management Information Systems.....	3
B.A. 325 — Financial Management.....	3
B.A. 343 — Principles of Marketing.....	3
B.A. 361 — Personnel Management or	
Econ. 420 — Labor/Management Relations.....	3
B.A. 301 — Processes of Management or	
B.A. 480 — Organization Theory.....	3

Total 18

**MINOR in Travel Industry Management\*:**

B.A. 151 — Introduction to Business.....	3
B.A. 160 — Tourism Principles and Practices.....	3
B.A. 378 — Passenger Transportation Management.....	3
B.A. 465 — Tourism Destination Planning and Development.....	3
B.A. 471 — Tourism Seminar.....	3
B.A. 372 — Hotel Administration or B.A. 377 — Food and Beverage Management.....	3

Total 18

\*For a Bachelor of Arts or Bachelor of Science Degree.

**Business Administration — M.B.A. Degree**

1. Admission to the M.B.A. is open to any person possessing an undergraduate degree whose grade point average and score on the Graduate Management Admission Test indicates a potential for satisfactory completion of the program.

2. Entering students will be required to possess competence at the undergraduate level in the fields of accounting, economics, quantitative methods, calculus, management and marketing. Prior to initial enrollment, the student's record will be reviewed to determine whether deficiencies exist which must be remedied before M.B.A. core work is undertaken.

3. Complete the general university requirements and master's degree requirements.

4. Complete a minimum of 30 semester hours (including 24 hours in the required core) of courses in business administration, accounting, and economics as approved by the candidate's graduate committee. At least 24 credits, including research and/or thesis, must be at the 600 level.

5. Earn a passing score for a comprehensive written examination generally taken during the last semester of course work to test achievement and knowledge in the general area of business and specialized courses.

6. If thesis is elected, an oral examination covering its methodology and content will be conducted by the student's graduate committee.

**M.B.A. Requirements:**

Recognizing that competence in the practice of management necessitates training in both breadth and depth, the MBA program at UAF consists of 18 courses, or the equivalent of a two-year program. The course work is divided into two tiers, or segments, as follows:

**Foundation Courses**

Admission to the program is open to holders of undergraduate degrees in a wide variety of disciplines. The foundation courses are offered to provide the basic environmental concepts, the required analytical tools, including calculus, and the functional knowledge of business which are prerequisites to the advanced MBA core courses. Individuals with undergraduate degrees in business from accredited institutions, or with adequate preparation may waive foundation courses in those areas. Thus, it is possible that some individuals could accomplish the degree requirements with the successful completion of the 30 hours of MBA core courses.

**Foundation Courses**

Foundation Courses	Credits
Econ. 611 — Principles of Economic Analysis.....	3
Acct. 602 — Financial Acct. Concepts for Administrators.....	3
B.A. 603 — The Process and Legal Environment of Management.....	3
B.A. 605 — Management Information Systems.....	3
B.A. 606 — Quantitative Analysis.....	3
B.A. 625 — Financial Management.....	3



B.A. 643 — Marketing Management .....	3
B.A. 608 — Organizational Theory .....	3
Total Required Foundation Courses	24

**Advanced M.B.A. Core Courses**

The MBA core courses constitute the second year in the program. Admission to the MBA core courses presupposes completion of the foundation core courses. At the discretion of the MBA Committee, a student who has substantially met the prerequisite requirements may be permitted enrollment in an MBA core course prior to completion of the foundation core program.

M.B.A. Core Courses	Credits
Econ. 624 — Managerial Economics .....	3
Acct. 650 — Management Accounting Seminar .....	3
B.A. 651 — Organizational Behavior .....	3
B.A. 680 — Seminar in Finance .....	3
B.A. 683 — Seminar in Marketing .....	3
B.A. 684 — Production and Operations Management .....	3
B.A. 690 — Administrative Policy .....	3
B.A. 691 — Research Methods and Design .....	3
B.A. 698 — Research Project .....	3
An elective chosen from B.A. 661 — Human Resource Management, Econ. 603 — Macro Economic Theory or other electives approved by the graduate committee .....	3
Total Required M.B.A. Core Courses	30
Total Program Requirements	54

- Candidates with an undergraduate major or an emphasis in Economics will substitute an additional elective approved by the Graduate Committee for Managerial Economics — Econ. 624.
- Thesis, 6 credits will substitute for B.A. 698, research project and 3 credits of electives.

## Chemistry

### College of Natural Sciences Department of Chemistry

Degrees: B.A., B.S., M.A., M.A.T., M.S.

Minimum Requirements for Degrees: B.A., B.S. — 130 credits; M.A., M.S. — 30 additional credits; M.A.T. — 36 additional credits

Graduates in chemistry qualify in many fields as teachers of chemistry; supervisors in industry; technical sales personnel; research chemists in federal, state, municipal, academic, or industrial laboratories; in premedicine; or as laboratory technicians. The rapid introduction of chemical techniques in all branches of commerce and the creation of the many synthetic products has caused 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 interdisciplinary 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 premedicine.

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. curriculum is accredited by the American Chemical Society.

## Requirements

### Chemistry — B.A. Degree

- Complete the general university requirements and B.A. degree requirements.
- Complete the following program (major) requirements:

	Credits
Chem. 105-106 — 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. 433 — Analytical Instrumental Lab .....	3
Chem. 434 — Physical Instrumental Lab .....	3
Chem. 492 — Seminar (seniors) .....	2
CS 201 — Computer Programming or ES 201 — Computer Techniques .....	3
Math. 200-201-202 — Calculus .....	12
Phys. 103-104 or 211-212 — General Physics .....	8
3. Total Credits Required .....	130

### Chemistry — B.S. Degree

- Complete the general university requirements and B.S. degree requirements.
- Complete the following program (major) requirements:

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. 412 — Instrumental Analytical Methods .....	3
*Chem. 498 — Research .....	4
*One additional 400 or 600 level chemistry course .....	3
3. Total Credits Required .....	130

### Suggested Curriculum for a B.S. Degree in Chemistry:

First Year		Credits
Fall Semester		15 credits
Chem. 105 — General Chemistry I .....		4
Math. 200 — Calculus .....		4
Engl. 111 — Methods of Written Communication .....		3
Elective .....		3
Spring Semester		17 credits
Chem. 106 — General Chemistry II .....		4
E.S. or C.S. 201 — Comp. Tech./Comp. Programming .....		3
Math. 201 — Calculus II .....		4
Speech Communication's Elective .....		3
Social Science/Humanities Elective .....		3
Second Year		15 credits
Fall Semester		15 credits
Chem. 212 — Chemical Equilibrium and Analysis .....		3
Chem. 213 — Quantitative Analysis Laboratory .....		1
Math. 202 — Calculus III .....		4
Phys. 103 or 211 — General Physics .....		4
Engl. 213 — Intermediate Exposition .....		3
Spring Semester		17 credits
Chem. 202 — Basic Inorganic Chemistry .....		3
Chem. 321 — Organic Chemistry .....		3
Phys. 104 or 212 — General Physics .....		4
Social Science/Humanities Elective .....		3
Elective .....		4
Third Year		16 credits
Fall Semester		16 credits
Chem. 322 — Organic Chemistry .....		3
Chem. 324 — Organic Laboratory .....		3
Chem. 331 — Physical Chemistry .....		3
Humanities/Social Science Elective .....		3
Electives .....		4
Spring Semester		17 credits
Chem. 332 — Physical Chemistry .....		3
*Chem. 412 — Instrument Analysis Methods .....		3
Chem. 433 — Analytical Instrumental Lab .....		3
Humanities/Social Science Elective .....		3
Electives .....		5
Fourth Year		17 credits
Fall Semester		17 credits
*Chem. 402 — Inorganic Chemistry .....		3
Chem. 434 — Physical Instrumental Laboratory .....		3
Chem. 492 — Seminar .....		1
*Chem. 498 — Research .....		2
Social Science/Humanities Elective .....		3
Electives .....		5
Spring Semester		16 credits
*Other Advanced Chemistry .....		3
Chem. 492 — Seminar .....		1

*Chem. 498 — Research.....	2
Electives.....	10

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 42 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 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. 105-106 — Fundamentals of Biology.....	8
Biol. 342 — Microbiology.....	4
Biol. 361 — Cell Biology.....	4
Biol. 362 — Principles of Genetics.....	4
Chem. 105-106 — General Chemistry.....	8
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. 433 — Analytical Instrumental Laboratory or Chem. 434 — Physical Instrumental Laboratory.....	3
Chem. 451 — General Biochemistry.....	3
Chem. 452 — Biochemistry Laboratory.....	3
Chem. 492 — Seminar.....	2
Math. 200-201-202 — Calculus.....	12
Phys. 103-104 or 211-212 — General Physics.....	8
Major elective (approved by department head).....	6
3. Total Credits Required.....	130

### Suggested Curriculum for a B.S. Degree in Chemistry: with Biochemistry/Molecular Biology Option

<b>First Year</b>	
<i>Fall Semester</i> 15 credits	
Chem. 105 — General Chemistry I.....	4
Biol. 105 — Fundamentals of Biology I.....	4
Math. 200 — Calculus I.....	4
Engl. 111 — Methods of Written Comm.....	3
<i>Spring Semester</i> 18 credits	
Chem. 106 — General Chemistry II.....	4
Biol. 106 — Fundamentals of Biology II.....	4
Math. 201 — Calculus II.....	4
Speech Communications Elective.....	3
Elective.....	3
<b>Second Year</b>	
<i>Fall Semester</i> 15 credits	
Chem. 212 — Chemical Equilibrium and Analysis.....	3
Chem. 213 — Quantitative Analysis Laboratory.....	1
Chem. 321 — Organic Chemistry.....	3
Math. 202 — Calculus III.....	4
Phys. 103 or 211 — General Physics.....	4
<i>Spring Semester</i> 17 credits	
Chem. 322 — Organic Chemistry.....	3
Biol. 342 — Microbiology.....	4
Phys. 104 or 212 — General Physics.....	4
Engl. 211 or 213 — Intermediate Exposition.....	3
Hum./Soc. Sci. Elective.....	3
<b>Third Year</b>	
<i>Fall Semester</i> 17 credits	
Chem. 324 — Organic Laboratory.....	3
Chem. 331 — Physical Chemistry.....	3
Chem. 451 — Biochemistry.....	3
Biol. 362 — Principles of Genetics.....	4
Hum./Soc. Sci. Elective.....	4
<i>Spring Semester</i> 16 credits	
Chem. 332 — Physical Chemistry.....	3
Biol. 361 — Cell Biology.....	4
***Electives.....	6
Hum./Soc. Sci. Elective.....	3

<b>Fourth Year</b>	
<i>Fall Semester</i> 16 credits	
Chem. 433 — Analytical Instrumental Laboratory or Chem. 434 — Physical Instrumental Laboratory.....	3
Chem. 492 — Seminar.....	1
Hum./Soc. Sci. Elective.....	3
***Electives.....	9
<i>Spring Semester</i> 17 credits	
Chem. 452 — Biochemistry Laboratory.....	3
Chem. 492 — Seminar.....	1
Major Electives.....	6
Hum./Soc. Sci. Elective.....	3
***Elective.....	3

\*\*\*9 of these credits must be 300 level or above.

### 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.

### Chemistry — M.A. or M.S. Degree

1. Complete the general university requirements 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.

A graduate student seeking a master's degree with a major in chemistry must develop a program in one of the general divisions of chemistry: analytical, biochemistry, inorganic, organic or physical. A student entering without preparation to take these courses may require additional time to earn his degree.

### M.A.T. Degree

Persons interested in this degree program should see the head of the department.

## Citizens' Law

### College of Liberal Arts Department of Political Science

#### Minor Only

The program in Citizens' Law will give students not planning to go to law school the opportunity to become familiar with legal ideals, legal institutions and the legal process. The student is provided with tools for reasoned appraisal of how the law works and of the policies that underlie it. The minor concentration is based firmly on the view that the study of law has a rich humanistic tradition and that its pursuit can encourage sustained reflection of fundamental values.

## Requirements

### MINOR in Citizens' Law (Not available with Justice major.)

Foundation Courses:	Credits
Just. 110 — Introduction to Justice.....	3
P.S. 101 — Introduction to American Government and Politics.....	3

Core Courses:	Credits
Just./P.S. 250 — History of the Law.....	3
Just./P.S. 303 — Introduction to Legal Processes.....	3
Just./P.S. 330 — Law and Society.....	3
Just./P.S. 404 — Legal Research and Writing.....	3

### Elective Courses: (6 credits)

Choose 6 credits from the following courses. Must include two different programs or disciplines.

ANS 425 — Federal Indian Law and Alaskan Natives.....	3
B.A. 331 — The Legal Environment of Business.....	3
B.A. 332 — Business Law.....	3
J.B. 413 — Mass Media Law and Regulation.....	3
Just. 352 — Criminal Law.....	3
Just. 354 — Procedural Law.....	3
P.S. 302 — Congress and Public Policy.....	3
P.S. 322 — International Law and Organization.....	3
P.S. 435 — Supreme Court and American Legal System.....	3
P.S. 436 — Courts and Civil Liberties.....	3

## Civil Engineering

### School of Engineering

#### Department of Civil Engineering

Degrees: B.S., M.C.E., M.S.

Minimum Requirements for Degrees: B.S. — 133 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 leading users 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 polluting, 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 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

<i>Fall Semester</i>	16 credits
Engl. 111 — Methods of Comm .....	3
Math 200 — Calculus .....	4
E.S. 101 — Descriptive Geometry for Engineers .....	2
Chem. 105 — General Chemistry .....	4
Social Science/Humanities Elective .....	3

<i>Spring Semester</i>	17 credits
Speech Communication Elective .....	3
Math 201 — Calculus .....	4
C.E. 112 — Elementary Surveying .....	3
Chem. 106 — General Chemistry .....	4
E.S. 201 — Computer Techniques .....	3

#### Second Year

<i>Fall Semester</i>	17 Credits
Math. 202 — Calculus .....	4
Phys. 211 — General Physics .....	4
Engl. 211 — Intermediate Exposition with Modes of Literature or Engl. 213 — Intermediate Exposition .....	3
E.S. 209 — Statics .....	3
Social Science/Humanities Elective .....	3

<i>Spring Semester</i>	16 credits
Math 302 — Differential Equations .....	3
Phys. 212 — General Physics .....	4
E.S. 210 — Dynamics .....	3
Geos. 261 — General Geology for Engineers .....	3
Social Science/Humanities Elective .....	3

#### Third Year

<i>Fall Semester</i>	16 credits
C.E. 334 — Properties of Materials .....	3
E.S. 301 — Engineering Analysis .....	3
E.S. 331 — Mechanics of Materials .....	3
E.S. 341 — Fluid Mechanics .....	4
C.E. 402 — Intro. to Transportation Engineering .....	3

<i>Spring Semester</i>	17 credits
E.S. 346 — Basic Thermodynamics .....	3
C.E. 344 — Water Resources Engineering .....	3
C.E. 326 — Intro. to Geotech. Engineering .....	4
C.E. 441 — Environ. Engineering .....	4
C.E. 431 — Structural Engineering I .....	3

#### Fourth Year

<i>Fall Semester</i>	17 credits
C.E. 432 — Structural Engineering II .....	3
E.S. 307 — Elem. of Electrical Engineering .....	3
Technical Elective* .....	3
Technical Elective* .....	3
Technical Elective* .....	3
Social Sciences/Humanities Elective .....	3

<i>Spring Semester</i>	16 credits
E.S.M. 450 — Economic Analysis and Operations .....	3
C.E. 438 — Design of Engr. Systems .....	3
Social Sciences/Humanities Elective .....	4
Technical Elective* .....	3
Technical Elective* .....	3
C.E. 400 — EIT Exam .....	0

\*Technical electives must include 12 credits of CE courses and 3 credits of technical courses and be approved in writing by the advisor.

Of the 16 social science/humanities credits, at least 6 must be above the 100 level or advanced courses in a 100-level sequence. Sufficient depth in at least one of the areas must be demonstrated by evidence of a sequence of courses. This sequence must be approved by the students' departmental advisor.

For credit toward a degree in Civil Engineering, the social science and humanities electives must be approved by the student's faculty advisor.

The ability to utilize computers for normal class work is expected in all engineering classes above the 100 level.

### Civil Engineering — M.C.E. Degree

Students entering the master of civil engineering program should have completed a bachelor's degree in civil engineering. Students with bachelor's degrees in other fields of engineering should check with their committee chairman for deficiency requirements.

A student will elect a civil engineering program approved by his/her graduate committee and must complete the general university requirements and master's degree requirements.

Thirty credits of approved courses beyond the B.S. degree are required. At least 24 credits, including thesis and research, must be at the 600 level.

### Civil Engineering — M.S. Degree

A student selecting this program will meet the general university requirements and master's degree requirements, plus the following: 30 credits approved by his graduate committee, of which six to twelve credits will be thesis. At least 24 credits, including thesis and research, must be at the 600 level.

## College Student Personnel Administration

### Rural College

#### Department of Behavioral Sciences and Human Services

Degree: M.Ed.

Minimum Requirements for Degree: 36 additional credits

## Requirements

### College Student Personnel Administration — M.Ed. Degree

This program is designed to train educators to be able to function in student service positions in higher education. This training would include specifically: history, philosophy, and contemporary issues in higher education; management concepts; principles of educational psychology, measurement, and research; and supervised laboratory experiences in college student personnel agencies.

#### Admission Requirements:

1. One year of satisfactory experience in post-secondary or secondary education or equivalent as approved by the Admissions Committee.
2. Admission may also be contingent upon (1) satisfactory scores on various standardized tests and (2) a satisfactory personal interview conducted by Behavioral Sciences and Human Services faculty members.

**Minimum Degree Requirements:**

1. Complete the general university requirements and master's degree requirements.

2. Complete a minimum of 36 credits as follows:

Required Courses:	Credits
Ed. 601 — Critique of Educational Research Methods.....	3
Ed. 618 — Higher Education: Basic Understanding.....	3
Ed. 654 — School Law.....	3
Ed. 690 — Seminar in Cross-Cultural Studies.....	3
Coun. 623 — Principles and Techniques of Individual Counseling....	3
Coun. 624 — Group Counseling.....	3
CSP 651 — Current Issues in Student Personnel Administration.....	3
CSP 655 — Practicum in Student Personnel Administration.....	3/3
(Must be taken twice)	
9 credits selected from the following:*	
Ed. 611 — Learning, Thinking and Perception in Cultural Perspective (3 credits)	
Ed. 612 — Cultural and Phil. Found. of Education (3 credits)	
CSP 661 — Practicum in Counseling: Higher Education (3 credits)	
Psy. 304 — Personality (3 credits)	

3. Pass a comprehensive examination.

4. Recency of undergraduate credit will be of concern to the candidate's committee when developing the graduate program.

\*Other courses may be selected with consent of the student's advisory committee.

## Community Health Practitioner

### Rural College

#### Kuskokwim Campus; Northwest Campus

Certificate in Community Health Practice; Degree: A.A.S

Minimum Requirements for Degree — 60 credits; for Certificate — see below.

The Community Health Practitioner Program is designed to prepare local residents to provide emergency medical and basic preventive, curative and rehabilitative health care services in their communities. At the same time, university credit may be awarded to be applied toward a certificate and an associate degree.

Admission to the Community Health Practitioner Certificate Program requires that the student be employed by a regional health corporation prior to entry into the program. A high school diploma and/or previous training or work experience in the health field is recommended, but not required. Community health aides\* are selected by the communities in which they are to serve with concurrence of the regional health corporation. It is suggested that the individual chosen be:

1. A local resident who intends to remain in the community;
2. Able to read and write English at sixth grade level or above;
3. Able to speak the local Native dialect;
4. Dependable and able to keep medical information confidential;
5. Physically able to handle the job;
6. Acceptable to most of the people of the community; and
7. Willing to leave home for periods of training.

The term "health aide" is often used prior to certification.

The community health practitioner curriculum is taught by the Alaska Native Health Service and some of the native health corporations in a collaborative program with UAF. In one area of the state, the Yukon-Kuskokwim, the community health practitioner curriculum is taught within the local UAF unit.

Since all students are employed in their villages, and most have families, the training at a center is separated into three periods of three to four weeks each, called Sessions I, II and III. The academic content of the three basic CHP courses is taught primarily during these three sessions. The field portion of the training is taught while the CHP works with a variety of health professionals, including radio or telephone contact with the local physician. The coordinator/instructor from the regional health corporation who gives the on-site instruction in the village is usually a mid-level health care provider. The visiting public health nurse emphasizes health education, surveillance and promotion.

#### Community Health Practitioner — Certificate

The CHP student who has registered for the following courses will receive 24 hours of UAF credit upon satisfactory completion of certificate requirements. Basic CHP courses are:

	Credits
CHP 110 — Community Health Practitioner, Session I.....	8
CHP 111 — Community Health Practitioner, Session II.....	8
CHP 112 — Community Health Practitioner, Session III.....	8

The requirements for certification are kept uniform throughout the state by an academic review committee for CHP programs in Alaska, which is advisory to the administrative head of the Rural College. Currently the certification requirements are:

1. Complete Session I, II and III.
2. A preceptorship consisting of at least 30 hours of supervised clinical experience, preferably at the clinic or hospital to which the CHA refers patients.
3. Complete the Skills List.
4. Pass the written and practical "Certification Examination."
5. Field experience of 600 hours of work as a CHP.
6. Evaluation of the CHP's work in his/her own clinic by a coordinator/instructor, or other health professional that is rated as satisfactory.

The coordinator/instructor of a health corporation assists the CHP in meeting these requirements.

Completion of academic and field components of this training ordinarily requires 14 to 18 months. These credits may be applied to the associate of applied science degree: community health practitioner.

When the instruction is given in a program outside of the university, a certificate is awarded jointly by the university and the program doing the instruction.

#### Community Health Practitioner — A.A.S. Degree

The curriculum for this program is built upon the Community Health Practitioner Certificate Program and the associate of applied science degree requirements. Prior certification as a CHP is an entrance requirement into the Community Health Practitioner Associate Degree Program.

Because community health practitioners are employed in rural communities, a special office has been created with the Rural College to service their needs. UAF employs a community health practitioner program liaison to represent this program within the university and to relate to the many agencies involved in this training throughout the state.

The certified community health practitioners entering the degree program may avail themselves of course offerings from any of the units within the university including distant learning. In addition, the Indian Health Service and the regional native health corporations may, with university approval, offer health-related courses for credit.

1. Complete the following general degree requirements:	Credits
Written Communication.....	6
Oral Communication.....	3
Select a total of 6 credits from the following areas:	
Humanities or	
Social Science or	
Math or	
Natural Science.....	6
Subtotal.....	15
2. Complete the following major specialty courses:	
24 hours of basic CHP courses and at least hours of advanced CHP courses.....	30
3. Electives.....	15
Certificate Total.....	60

The major specialty for the community health practitioner degree can be satisfied by using the 24-hour block of credits in the CHP certificate program and 6 credits from the advanced courses listed below:

	Credits
CHP 202 — Emergency Care for Community Health Practitioners.....	3
CHP 203 — Clinical Update for Community Health Practitioners.....	2
CHP 206 — Life Coping Skills.....	2
CHP 207 — Maternal and Infant Health.....	2
CHP 208 — Communicable Disease.....	2
CHP 211 — Health Education.....	1

Nine of the 30 CHP credits awarded with the CHP certificate may be used as the applied studies requirement in the Associate of Arts (A.A.) degree.

## Community Psychology

### Rural College

#### Department of Behavioral Sciences and Human Services

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 multi-cultural populations. The program attempts to meet the demand for trained mental health professionals in rural Alaska.

#### Objectives of the program are:

1. to train graduate-level psychologists for rural and cross-cultural settings in Alaska;
2. to place graduate-level psychologists in agencies of human and social services and education in Alaska;
3. to provide mental health professionals for urban areas that have a large cross-cultural and rural population (in-migration groups);
4. to provide in-service and continuing education opportunities for mental health professionals at the graduate level with specific regard to cross-cultural and rural issues in the delivery of mental health service.

The program is oriented toward prevention as a major responsibility for the rural provider. But prevention and treatment are not separated since both must focus on building intact, naturally occurring systems in families and communities. The program, then, sees the community as both a resource for problem solving and as the target for change.

The program is specifically committed to learning from non-Western cultures, in particular Native cultures in Alaska, so that practitioners can be culturally sensitive rather than monocultural and therefore better serve their clients. There is an emphasis in the curriculum on experiential learning and the use of self-knowledge as a basis for learning how to help others. The program seeks to increase students' self-awareness, in particular their understanding of cultural diversity and their own cultural biases, and their appreciation of the significance of their own development for effective work with individuals and communities.

The program is practice-oriented, seeking to educate practitioners who can reflect intelligently and creatively on their own and others' practice. Courses strive to be cross-culturally sensitive, either through course content, style of teaching or use of class and community resources. Skills such as prevention strategies, counseling, and psychological testing and evaluation are taught with the recognition that such skills may be expressions of Western culture, and therefore must be applied sensitively in multi-cultural situations, or if necessary, abandoned for more culturally appropriate methods of help. We seek to educate students committed to constructive social change which gives all people equal access to resources.

#### Admittance

Students are accepted once a year in the spring for the fall semester. Applications are generally due by April 1, although applications may be accepted at any time during the year. Notification of admission will occur prior to the end of the spring semester. The program will accept a maximum of 15 students per year with the option to accept less, given limited resources.

#### The program requires the following for consideration:

- a) Evidence of completion of the baccalaureate degree from an accredited institution in counseling, psychology, sociology, social work, human services, education or related professions. A minimum grade point average of 3.25 and/or evidence of personal and professional suitability for community psychology work will be sought. In part, this will be inferred from the participant's academic and employment history and an interview when possible. Also, three letters of reference will be required endorsing the applicant's admission to the community psychology program.
- b) Persons who have a non-social science background may be accepted but must complete the necessary undergraduate prerequisites as delineated by their adviser prior to advancement to candidacy.
- c) An application must include a personal statement of the applicant's purpose in seeking this degree.

**Part-time students will be accepted.** However, the student must enroll in one core required course during the first year.

#### Course Requirements

The program requires a 15-credit (5 courses) core of courses with a 12-hour internship and three to six hours for a project or thesis, including an oral defense of the work which will also constitute a comprehensive exam. The student must also complete at least nine credits (three courses) from an approved list of courses (see below) in consultation with the student's adviser. Additional electives are to be chosen in consultation with the adviser to make up the 30-credit hour requirement for course work.

#### Internship

This is either a full-time, one-semester or part-time, one-year experience under the supervision of a qualified psychologist, mental health or human services practitioner. Placement are arranged to occur after at least 24 credits are completed.

## Requirements

### Community Psychology — M.A. Degree

Required Courses:	30-33 Credits
Psy. 630 — Community Psychology.....	3
Psy. 631 — Community Psychology: Cross-Cultural Applications.....	3
Psy. 661 — Cross-Cultural Counseling.....	3
Psy. 663 — Clinical Methods and Assessment.....	3
ANS 401 — Knowledge of Native Elders.....	3
Psy. 690 — Internship in Community Psychology.....	12
Psy. 698/699 — Project/Thesis.....	3-6

Complete at least 9 credits from the following:

Psy. 625 — Prevention of Alcohol and Drug Dependency.....	3
Psy. 635 — Field-Based Research.....	3
Psy. 655 — Healing: Implications for Clinical/Community Practice.....	3
Psy. 660 — Principles and Techniques of Individual Counseling.....	3
Psy. 688 — Practicum in Community Psychology.....	3
Psy. 662 — Transformational Development and Psychol-therapy.....	3
Soc. 638 — Social Policy and Social Change.....	3
Soc. 645 — Prevention Theories and Strategies.....	3

## Computer Information Systems

### School of Management

#### Department of Business Administration

#### 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

	Credits
Acct. 101 — Elementary Accounting I.....	3
Acct. 102 — Elementary Accounting II.....	3
B.A. 101 — Introduction to Management Information Systems.....	3
B.A. 201 — COBOL or	
CS 201 Computer Programming.....	3
B.A. 220 — Basic Programming Languages or	
CS 202 Computer Programming.....	3
B.A. 310 — Management Information Systems.....	3
Acct. 316 — Accounting Information Systems.....	3
<b>Total</b>	<b>21</b>

## Computer Science

### College of Liberal Arts

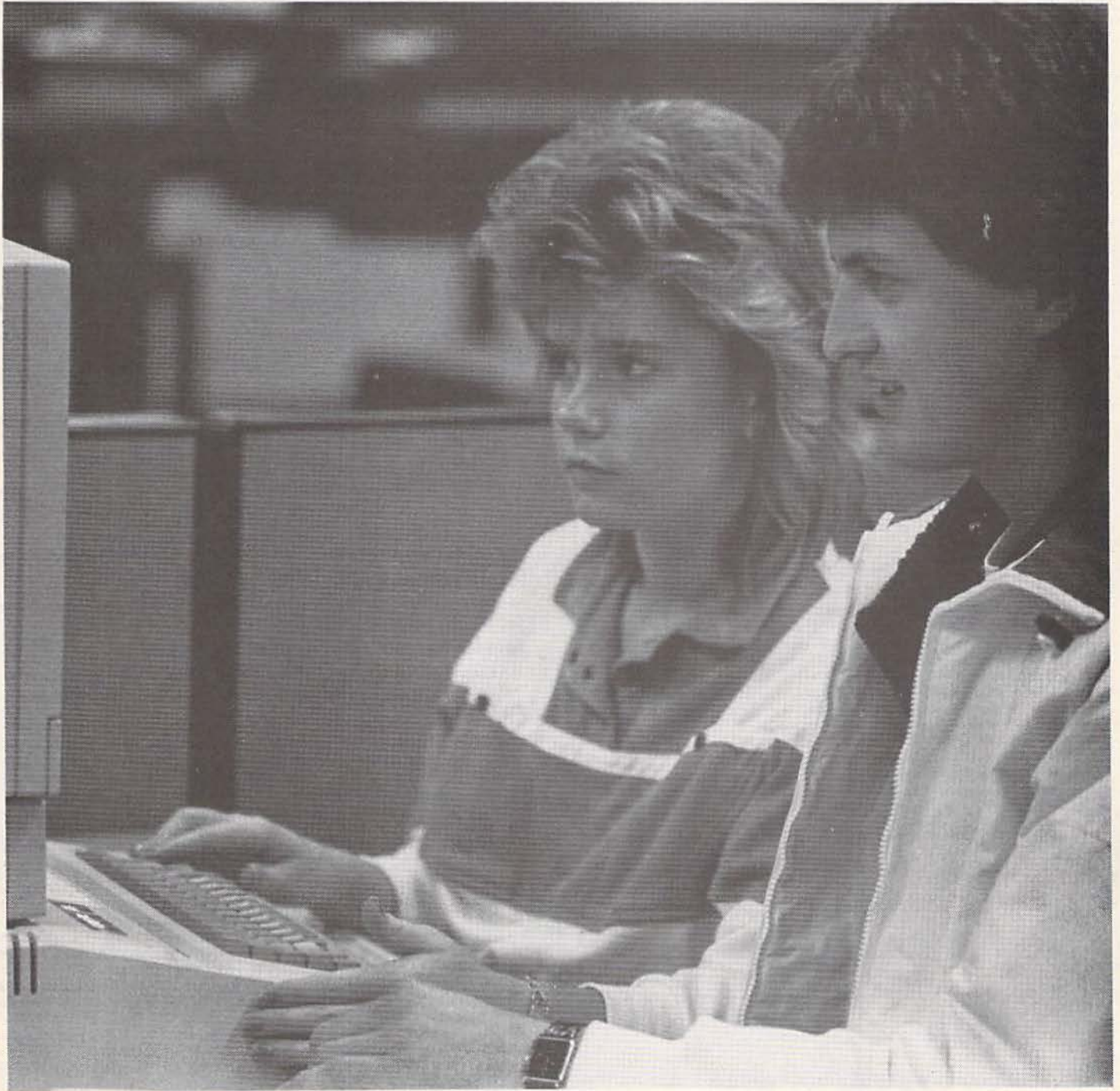
#### Department of Mathematical Sciences

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.



Freshmen Crystal Jackovich, (left) and Tim Olsen study together in the library using one of the library's microcomputers.

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 C.S. 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.

## Requirements

### Computer Science — B.S. Degree

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

2. Complete the following mathematics requirement: Credits

Math. 200 — Calculus ..... 4

Math. 201 — Calculus ..... 4

Math. 210 — Calculus and the Computer ..... 1

Math. 211 — Linear Algebra and the Computer ..... 1

Math. 307 — Discrete Mathematical Structures ..... 3

One of the following:

Math. 302 — Differential Equations (3 credits)

Math. 308 — Abstract Algebra (3 credits)

Math. 310 — Numerical Analysis (3 credits)

Math. 314 — Linear Algebra (3 credits)

Math. 371 — Probability (3 credits)

Math. 408 — Mathematical Statistics (3 credits)

Math. 460 — Mathematical Modeling (3 credits)

Stat. 301 — Elementary Probability and Statistics (3 credits)

Stat. 400 — Statistics (3 credits) ..... 3

3. Complete the following major requirements:

C.S. 201 — Computer Programming I ..... 3

C.S. 202 — Computer Programming II ..... 3

C.S. 301 — Assembly Language Programming ..... 3

C.S. 311 — Data Structures and Algorithms ..... 3

C.S. 321 — Operating Systems ..... 3

C.S. 331 — Programming Languages ..... 3

C.S. 401 — Software Engineering ..... 3

C.S. 411 — Analysis of Algorithms

or C.S. 451 — Automata and Formal Languages ..... 3

E.E. 341 — Computer Organization I ..... 4

E.E. 342 — Computer Organization II ..... 4

Upper Division electives: either C.S. courses

or approved electives such as B.A. 310, E.E. 443, E.E. 454 ..... 3

4. Total Credits Required ..... 120

### MINOR in Computer Science

C.S. 201 — Computer Programming I ..... 3

C.S. 202 — Computer Programming II ..... 3

C.S. 301 — Assembly Language Programming ..... 3

C.S. 311 — Data Structures and Algorithms or

C.S. 321 — Operating Systems ..... 3

Elective selected from the following:

Any C.S. course (except C.S. 101) or

Math 210 and Math 211 — Calculus/Linear Algebra & Computer or

E.E. 341 — Computer Organization I or

B.A. 201 — COBOL or

B.A. 310 — Management Information Systems or

Acct 316 — Accounting Information Systems or

Other elective approved by advisor ..... 2-3

### Computer Science — M.S. Degree

1. Complete the general university requirements and graduate degree requirements.

2. Complete the following program (major) requirements: 30 Credits

C.S. 411 — Analysis of Algorithms or

C.S. 611 — Complexity of Algorithms ..... 3

C.S. 631 — Programming Language Implementation ..... 3

C.S. 448 — System Architecture or

C.S. 641 — Advanced Systems Architecture ..... 3

C.S. 451 — Automata and Formal Languages or

C.S. 651 — The Theory of Computation ..... 3

Advisor approved electives ..... 12

C.S. 690-691 — Graduate Seminar and Project ..... 6

Not more than 6 credits may be taken at the 400 level.

3. Upon completion of core course work, the candidate must pass an examination based on the core material.

## Creative Writing

### College of Liberal Arts Department of English

Degree: M.F.A.

Minimum Requirements for Degree: 45 credits

#### Creative Writing — M.F.A. Degree

1. Complete the general university requirements and master's degree requirements.

2. Complete a minimum of 45 approved credits at the 600 level, except as noted under 2.f, distributed as follows:

a. Engl. 671 — Writers' Workshop ..... 9 Credits

b. Engl. 601 — Bibliography, Meth., and Criticism ..... 3

c. Engl. 685 — Teaching College Composition (if a graduate assistant

or planning to teach) (Extra 600-level course required if student

does not take English 685) ..... 3

d. Two forms courses ..... 6

Engl. 681 — Forms of Poetry

Engl. 682 — Forms of Fiction

Engl. 683 — Forms of Drama

Engl. 684 — Forms of Non-Fiction Prose

e. Literature seminars (minimum of four; to be determined by student's

advisory committee) ..... 12

f. Electives (to be approved by student's advisory committee; courses

may be at 400 level if in another discipline) ..... 6

g. Engl. 699 — Thesis ..... 6

3. Advancement to candidacy will be based upon finding by student's

advisory committee that student has made satisfactory progress in both

academic and writing areas.

4. Pass a written comprehensive examination, based on a standardized

reading list; examination to be taken no later than student's fourth

semester of work.

5. Pass an oral defense of the thesis.

(See also "English")

## Culinary Arts

### School of Career and Continuing Education Service Industry Department

Certificate; Degree: A.A.S.

Minimum Requirements for Certificate — 32 credits; for Degree — 63 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. Note: additional fees covering a uniform and supplies will be charged when students enroll in CAH 140 or CAH 240 level classes.

## Requirements

1. Complete the following general degree requirements: Credits

Written Communications ..... 6

(Engl 111 required)

Oral Communications ..... 3

Select a total of 6 credits from the following areas:

Humanities or

Social Science or

Math or

Natural Science ..... 6

Subtotal ..... 15

2. Complete the following major degree requirements: Credits

CAH 105 — Principles of Food Service ..... 3

CAH 150 — Food Service Sanitation ..... 1

CAH 152 — Supervisory Skills ..... 2

CAH 154 — Dining Room Service.....	2
CAH 242 — Food Production I.....	4
CAH 243 — Food Production II.....	4
CAH 247 — Bakery Production II.....	4
CAH 248 — Bakery Production III.....	4
CAH 250 — Garde Manager.....	2
Subtotal.....	26
Select 18 credits from the following:	
CAH 140 — Principles of Cooking.....	6
CAH 141 — Food Production I.....	6
CAH 145 — Principles of Baking.....	6
CAH 146 — Bakery Production I.....	6
Subtotal.....	18
3. Major specialty electives:	
Select at least 4 credits from the following:	
CAH 170 — Gourmet Cooking.....	2
CAH 199 — Externship.....	1-12
CAH 253 — Storeroom: Purchasing and Receiving.....	2
CAH 255 — Food Service Management.....	2
CAH 256 — Food Service Accounting.....	2
CAH 257 — Oenology and the Hospitality Industry I.....	1
Subtotal.....	4-12
Degree Total.....	63

#### Culinary Arts Certificate Program and Suggested Course Sequence:

First Year/Fall Semester	Credits
CAH 105 — Principles of Food Service.....	3
CAH 140 — Principles of Cooking.....	6
CAH 145 — Principles of Baking.....	6
CAH 150 — Food Service Sanitation.....	1
Subtotal.....	16

First Year/Spring Semester	Credits
CAH 141 — Food Production I.....	6
CAH 146 — Bakery Production I.....	6
CAH 152 — Supervisory Skills.....	2
CAH 154 — Dining Room Service.....	2
Subtotal.....	16
Certificate Total.....	32

## Diesel/Heavy Equipment Mechanics

### School of Career and Continuing Education Trade and Industry Department

#### 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 15 students to encourage instructor-student interaction and allow for individualized assistance. An applied math proficiency exam must be passed to complete certificate requirements.

#### Requirements

##### Diesel/Heavy Equipment Mechanics — Certificate

#### Suggested Course Sequence

Fall Semester	Credits
DSL.T 150 — Diesel Mechanics I.....	7
DSL.T 152 — Diesel Mechanics II.....	7
WMT 103 — Welding I.....	3
Subtotal.....	17

Spring Semester	Credits
MECN 101 — Heavy Equipment/Mechanics I.....	7
MECN 102 — Heavy Equipment/Mechanics II.....	7
WMT 105 — Welding II.....	3
Subtotal.....	17
Certificate Total.....	34

## Drafting Technology

### School of Career and Continuing Education Trade and Industry Department

#### Certificate

Minimum Requirements for Certificate: 30 credits

Two options in the Drafting Technology Certificate Program are offered: architectural drafting and civil drafting. Both are one-year programs (30 credits) which 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 architecture 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.

#### Requirements

##### Drafting Technology — Certificate Suggested Course Sequence

#### Architectural Drafting

Fall Semester	Credits
DRT 100 — Introduction to Drafting.....	1
DRT 101 — Beginning Drafting I.....	4
DRT 121 — Building Trades Blueprint Reading.....	3
Math. 107 — Elementary Functions.....	3
Approved electives*.....	4
Subtotal.....	15

#### Spring Semester

DRT 102 — Beginning Drafting II.....	2
DRT 140 — Architectural Drafting.....	4
DRT 151 — Civil Concepts.....	2
Math. 108 — Trigonometry.....	3
Approved electives*.....	4
Subtotal.....	15
Certificate Total.....	30

#### Civil Drafting

Fall Semester	Credits
DRT 100 — Introduction to Drafting.....	1
DRT 101 — Beginning Drafting I.....	4
DRT 121 — Building Trades Blueprint Reading.....	3
Math. 107 — Elementary Functions.....	3
Approved electives*.....	4
Subtotal.....	15

#### Spring Semester

DRT 102 — Beginning Drafting II.....	2
DRT 150 — Civil Drafting.....	4
DRT 141 — Principles of Architectural Drafting.....	2
Math. 108 — Trigonometry.....	3
Approved electives*.....	4
Subtotal.....	15
Certificate Total.....	30

\*Must be approved in advance (in writing) by the drafting program adviser.

## Early Childhood Development

### School of Career and Continuing Education Service Industry Department

#### Certificate; Degree: A.A.S.

Minimum Requirements for Degree — 60 credits; for Certificate — 30 credits

The A.A.S. degree in early childhood development prepares students to find employment or to improve present job skills in early childhood and child care 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.



## Requirements

### Early Childhood Development — A.A.S. Degree

1. Complete the following general degree requirements:	Credits
Written Communications.....	6
(Engl. 111 required)	
Oral Communications.....	3
Social Sciences.....	6
(Psy. 101 and Psy. 245)	
Subtotal.....	15
2. Complete the following major degree requirements:	Credits
ECHD 100 — Introduction to Early Childhood.....	3
ECHD 105 — Survey of Programs for Young Children.....	3
ECHD 110 — Practical Paths to Discipline and Guidance.....	1
ECHD 120 — Child Nutrition, Health and Safety.....	3
ECHD 131 — Group Management.....	1
ECHD 135 — Developing Programs for Infants/Toddler Care.....	2
ECHD 250 — Practicum I.....	3
ECHD 251 — Practicum II.....	3
ECHD 255 — Activities for Young Children.....	3
ECHD 260 — Introduction to the Exceptional Child.....	3
ECHD 265 — Culture Learning and the Young Child.....	2
Soc. 242 — The Family.....	3
Subtotal.....	33
3. Complete 15 credits of general electives.....	15
<b>Degree Total.....</b>	<b>60</b>

*Recommended Electives: Any ECHD catalog or special topics (ECHD 193 or 293) courses. Courses from Applied Business or Counseling programs which have been approved by the ECHD adviser.*

### Early Childhood Development — Certificate

1. Complete the following required courses:	Credits
Engl. 111 — Methods of Written Communication.....	3
Psy. 101 — Introduction to Psychology.....	3
Psy. 245 — Child Development.....	3
ECHD 100 — Introduction to Early Childhood Development.....	3
ECHD 105 — Survey of Programs for Young Children.....	3
ECHD 110 — Practical Paths to Discipline and Guidance.....	1
ECHD 120 — Child Nutrition, Health and Safety.....	3
ECHD 131 — Group Management.....	1
ECHD 135 — Developing Programs for Infants/Toddler Care.....	2
ECHD 250 — Practicum I.....	3
ECHD 255 — Activities for Young Children.....	3
Subtotal.....	28
2. Complete 2 credits of general electives.....	2
<b>Certificate Total.....</b>	<b>30</b>

## Early Childhood Education

### Rural College

#### Kuskokwim Campus

Degree: A.A.S.

Minimum Requirements for Degree: 60 credits

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.

The 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 which comprises the six competencies of the CDA credential.

Students who desire a broader based education with future possibilities of working in a paraprofessional position or of continuing on to a baccalaureate degree will want to pursue the associate of applied science degree in early childhood education.

## Requirements

### Early Childhood Education — A.A.S. Degree

1. Complete the following general degree requirements:	Credits
Written Communications.....	6
Oral Communications.....	3
Select a total of 6 credits from the following areas:	
Humanities or	
Social Science or	
Math or	
Natural Science.....	6

Subtotal.....	15
2. Complete the following major specialty requirements:	Credits
ECDD 111 — A Safe Environment.....	1
ECDD 112 — A Healthy Learning Environment.....	1
ECDD 113 — Learning Environment.....	1
ECDD 121 — Physical Activities for Young Children.....	1
ECDD 122 — Cognitive Activities for Young Children.....	1
ECDD 123 — Communication Activities.....	1
ECDD 124 — Creative Activities for Young Children.....	1
ECDD 131 — Guidance and Discipline.....	1
ECDD 132 — Social Development for the Young Child.....	1
ECDD 211 — Developing Positive Self-Concepts in Children.....	1
ECDD 221 — Positive Home-Center Relationships.....	1
ECDD 222 — Program Management.....	1
ECDD 223 — Professionalism.....	1
ECDD 289 — Final Assessment for Child Development Associate Credential.....	1
Psy. 101 — Introduction to Psychology.....	3
Psy. 245 — Child Development.....	3
3. Complete 9 credits from the following courses of early childhood electives:	
ECDD 109 — Introduction to Child Development Associate.....	1
ECDD 231 — Screening.....	1
ECDD 232 — Assessment/Recording.....	1
ECDD 233 — Mainstreaming Preschool Children with Special Needs.....	1
ECDD 299 — Practicum in Early Childhood.....	1-3
Ed. 304 — Literature for Children.....	3
Ed. 220 — Culture and Learning.....	3
<b>Degree Total.....</b>	<b>60</b>

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

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: geography, 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

- Complete the general university requirements and B.A. degree requirements.
- Complete the following fundamental courses:
  - Complete one year of college-level mathematics
  - Complete one semester of college chemistry (Chem. 103 recommended) or one semester of college physics (Phys. 103 recommended)
  - 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/logic degree requirements.)
- 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 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.
- 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): ALR 101, 310, 380, 400, 401, 430; Biol. 103 or 105-106, 271; Geog. 301, 492; Geos. 213, 214, 304, 401, 408, 422; Min. 202, 320; Pet.E. 103; G.E. 471. If these 12 credits are listed for the minor, they must be in a different field than the major.
- Complete approved electives including minor requirements to bring total credits to 130.

## Economics

### School of Management Department of Economics

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

**Minimum Requirements for Degrees:** B.A. — 120 Credits B.B.A. — 130 Credits M.S. — 30 additional 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 three-fold: (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.

## Requirements

### Economics — B.A. Degree

1. Complete general university requirements and B.A. degree requirements.
2. Complete the following program (major) requirements: Foundation courses (may be used to meet B.A. general degree requirements where applicable):

	Credits
Acct. 101 — Elementary Accounting.....	3
Econ. 201-202 — Principles of Economics I & II.....	6
Math. 161 — Algebra for Business and Economics.....	3
Math. 162 — Calculus for Business and Economics.....	4
P.S. 101 — American Government and Politics.....	3
P.S. 102, 202, 211 or 301 —.....	3
B.A. 101 — Intro. to Management Information Systems or	
C.S. 201 — Computer Programming I.....	3

	Credits
<b>Complete 30 additional credits in Economics including:</b>	
Econ. 226 — Introduction to Statistics for Economics & Business.....	3
Econ. 227 — Intermediate Statistics for Economics and Business.....	3
Econ. 321 — Intermediate Microeconomics.....	3
Econ. 324 — Intermediate Macroeconomics.....	3
*Electives in Economics.....	18

\*Must be 300-level or higher in which 6 credits of the following courses may be included: B.A. 325, 343, 360, 423, 425, 480; and ANS 415.

3. Minimum credits required..... 120

### Economics — B.B.A. Degree

1. Complete general university requirements and B.B.A. degree requirements. The 6 credit humanities electives shall include a combination of courses (classified as humanities) in which 3 credits shall be selected from either philosophy, English (other than composition) or foreign language at the 200 level or above.
2. Complete the following statistics requirements:

Econ. 226 — Intro. to Statistics for Economics and Business.....	3
Econ. 227 — Intermed. Statistics for Economics and Business.....	3

3. Complete the following program (major) requirements:

	33 Credits
<b>Common Body of Knowledge (CBK) Requirements</b>	
Acct. 101 and 102 — Elementary Accounting.....	6
B.A. 310 — Intermed. Management Information Systems or	
Acct. 316 — Accounting Information Systems.....	3
(For those students pursuing a double major in accounting and economics.)	
B.A. 101 — Intro. to Management Information Systems.....	3
B.A. 325 — Financial Management.....	3
B.A. 331 — Business and Law.....	3
B.A. 343 — Principles of Marketing.....	3
Econ. 324 or 350 — Intermediate Macroeconomics	
or Money and Banking.....	3
B.A. 360 — Operations Management.....	3

B.A. 390 — Organizational Behavior.....	3
B.A. 462 — Administrative Policy.....	3

### Economics Major Requirements 27 Credits

<b>A. General Requirements</b>	
P.S. 201, 211, 263, or 302.....	3
<b>B. Economics Requirements</b>	
Econ. 321 — Intermediate Microeconomics.....	3
Econ. 324 — Intermediate Macroeconomics (if not taken in CBK)....	0-3
Econ. 463 — International Economics.....	3
Nine hours from the following courses (At least three hours must be at the 400 level): Econ. 335, 350, 351, 409, 420, 421, 436, 437, 438, 451, and ANS 415.....	6-9*
Electives approved by major advisor.....	9**
<b>C. Free Electives</b>	
These credits may be used for an optional minor or second BBA Major. (At least 3 credits must be in courses offered outside of School of Management.).....	20 Credits

3. Minimum credits required..... 130

\*Only six credit hours of electives in this category are required if Econ 350 is taken as part of the CBK.

\*\*Courses in this category must at the upper division level and may be accounting, business, or economics courses, where three (3) credits must be taken in either accounting or business administration. Courses in this category may be utilized to satisfy the requirements of other BBA degree majors.

### MINOR in Economics:

All minor programs must be approved by the head of the Economics Department.

A minor in Economics requires: Credits

Econ. 201 — Principles of Economics I.....	3
Econ. 202 — Principles of Economics II.....	3
9 credits in approved economics courses at the 300-level or above.....	9

Total 15

## Education

### Rural College Department of Education

Degrees: B.Ed., B.T., M.Ed., Ed.S.

**Minimum Requirements for Degrees:** B.Ed., B.T. — 130 credits; M.Ed. — minimum of 36 additional credits; M.A.T. — minimum of 36 additional credits; Ed.S. — minimum of 30 credits beyond master's.

**Certification** — Students may qualify for teaching certificates in various states only by planning their programs to meet specific requirements. Certificates are issued by the appropriate state department of education. In Alaska, certificates are granted by the Alaska Department of Education in Juneau. Students who obtain the B.Ed. degree will meet the current academic requirements for Alaskan certification. Students seeking a minor in education should consult with the faculty of the Department of Education during their freshman year to obtain specific requirements. Individuals who hold bachelor's degrees and wish to obtain certification should also consult with the faculty of the Department of Education.

**Cross-Cultural Education Development Program** — The X-CED program is the teacher education program delivered 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 located in Barrow (North Slope), Bethel (Kuskokwim), Dillingham (Bristol Bay), Fairbanks, Kotzebue (Chukchi), and Nome (Northwest). The X-CED program offers full-time undergraduate course work in education for students seeking a B.Ed. degree. 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 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 Chairman, Department of Education, Fairbanks campus.

### Teachers for Alaska Program

This program is designed to provide teaching certification to students with a baccalaureate degree who want to teach at the secondary school level either in small rural schools or in Alaska's urban multi-

cultural secondary schools. The program offers two options: 1) secondary certification in a subject area, or 2) K-12 small schools certification. Students participate in a full-time program that features small seminars, an apprenticeship, a cohort student group, and a graduate level approach to preparation for teaching.

Students enroll in a fall and spring/late spring block of integrated, tightly sequenced courses. The fall program consists of Ed. 582 — Teaching as Reflective Inquiry, Ed. 583 — Teaching as Decision-Making and Invention, and Ed. 584 — Practicum. The spring/late spring block consists of Ed. 453 or Ed. 455 — Student Teaching, Ed. 619 — Reflective Inquiry into Multi-Cultural Classrooms and Communities, and Ed. 692 — Designing Learning Environments. The K-12 certification option requires additional course work.

Inquiries should be addressed to the Teachers for Alaska program office on the Fairbanks campus.

#### Acceptance to Teacher Education

Any student wishing to become certified for teaching through the University of Alaska Fairbanks must formally apply for admission and be accepted to the teacher education program. The application process should be initiated during enrollment in Ed. 201, or, for transfer students and in other special cases, at least during the semester prior to enrolling in any methods courses. **Acceptance to teacher education must occur before enrolling in education methods courses (Ed. 419, 381, and 421 for elementary education and Ed. 402 and 430 for elementary education).** Continuation in teacher education is based upon the maintenance of satisfactory performance in all areas of the program.

#### Criteria for Admission to Teacher Education

The Admissions Committee will consider a variety of information, including the following:

- A. Academic competence
- B. Successful experiences in one or more of the following contexts:
  1. public school classrooms
  2. other settings with children
  3. rural Alaska
- C. Interpersonal, intercultural, and communication skills
- D. Any and all additional standards set by the State

These factors will be assessed by faculty rating forms, letters of reference, university grade point average, and evaluations from University-sponsored practicum placements.

## Requirements

### Education — B.Ed. Degree

1. Complete general university requirements.
2. Complete the following degree and program (major) requirements:

	Credits
<b>A. Communication</b> .....	9
Engl. 111 — Methods of Written Communication .....	3
Engl. 211 — Intermediate Exposition with Modes of Literature or	
Engl. 213 — Intermediate Exposition .....	3
Speech Communication Elective .....	3
<b>B. Humanities</b> .....	12
Ling. 101 — Nature of Language or	
ANL 215 or 216 — Alaska Native Languages.....	3
Electives.....	9
(Upper division American Literature recommended)	
<b>C. Social Sciences</b> .....	24
Anth. 242 — Native Cultures of Alaska .....	3
Hist. 131 or 132 — History of the U.S.....	3
History Elective.....	3
P.S. 101 — Intro. to Amer. Government and Politics .....	3
P.S. 263 — Alaska Native Politics or	
ANS 310 — The Political Economics of ANCSA .....	3
Psy. 101 — Introduction to Psychology .....	3
Psy. 240 — Devel. Psychology in Cultural Perspective .....	3
Elective .....	3
<b>D. Mathematics and Natural Science</b> .....	16
For Elementary Education:	
Math. 205 — Math. for Elementary School Teachers .....	3
Math. Electives.....	6
Science Electives (including laboratory science) .....	7
For Secondary Education:	
Math. Electives.....	6
Science Electives (including laboratory science) .....	7
Math. or Science Elective.....	3
<b>E. Education</b> .....	3
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 .....	3
HMSV 205 — Factors in Health and Disease or	
Approved Health/Nutrition Elective .....	3

### For Elementary Education:

Ed. 304 — Literature for Children .....	3
Ed. 310 — Modes of Creative Expression in Education or	
Mus. 309 — Elementary School Music Methods .....	3
Ed. 381 — Foundations of Literacy Development .....	3
Ed. 419 — Integ. Meth. and Curriculum Development .....	6
Ed. 421 — Strategies for Reading and Writing Instruction in Multicultural Classrooms.....	3
P.E. 327 — Movement Activity for Children or	
Approved Elective .....	2-3
Ed. 452 — Elementary Student Teaching.....	12

(Candidates who have taught successfully two years in the public elementary schools may request a reduced student teaching experience. Candidates wishing to so petition should see the coordinator of the Office of Practica Experience.)

Complete one of the concentrations listed below:

Elementary Education Concentrations: Each concentration must have a minimum of 12 upper division credits. General education requirements (not including Communication requirements) may be counted toward these concentrations.	
<b>1. Humanities</b> .....	24
At least 12 credits from one of the following subjects:	
Art	
English	
Music	
<b>2. Social Sciences</b> .....	36
At least 12 credits concentrated in one subject area	
<b>3. Math and/or Science</b> .....	28
At least 15 credits concentrated in math or in one natural science	
<b>4. ESL/Applied Linguistics</b> .....	21
Engl. 318 — Modern English Grammar .....	3
Engl. 462 — Applied English Linguistics .....	3
ANS 320 — Language and Ethnicity or	
Anth. 204 — Language and Culture.....	3
6 Credits in a Language .....	6
Approved Linguistics.....	6
<b>5. Alaska Native Language/Bilingual</b> .....	25-27
16-18 credits in one Alaska Native Language .....	16-18
ANL 387-388 — Bilingual Meth. and Materials.....	6
ANL 215 — Alaska Native Language or	
ANL 216 — Alaska Native Language.....	6
<b>6. Early Childhood Development</b> .....	18
12 credits of approved Early Childhood Development courses	
6 upper division credits from one of the following:	
Art	Physical Education
English	Speech
Music	Theater

### For Secondary Education:

Ed. 407 — Reading Strat. for Secondary Teachers .....	3
Ed. 424 — Small High School Programs or	
Ed. 425 — Community as an Educational Resource .....	3
Ed. 402 — Methods of Teaching in Secondary School or	
Approved Substitute.....	3
Ed. 430 — Multicultural Teaching Techniques .....	3
Ed. 490 — Curriculum Development .....	3
Ed. 453 — Secondary Student Teaching.....	12
(Candidates who have taught successfully two years in the public secondary schools may request a reduced teaching experience. Candidates wishing to so petition should see the coordinator of the Office of Practica Experience.)	
Complete one of the interdisciplinary major/minors listed below:	
<b>1. Language Arts/Humanities</b> .....	48
(must include a minimum of 12 upper division credits)	
Engl. 111 — Methods of Communication.....	3
Engl. 211 — Intermediate Exposition with Modes of Literature or	
Engl. 213 — Intermediate Exposition .....	3
English Electives.....	9
Journalism, Speech Communication and Theater .....	6
Alaska Native Languages, Foreign Languages and Literature,	
Linguistics .....	6
Alaska Native Studies (courses classified as humanities only), Art,	
Humanities, Music, Philosophy.....	9
Electives from above areas.....	12
<b>2. Math./Science</b> .....	45
(Must include a minimum of 12 upper division credits)	
Hum. 202 — Unity in the Sciences .....	3
Math. Electives (minimum 6 credits upper division).....	15
Science electives (minimum 6 credits upper division).....	27
A minimum of 6 credits from each of the following fields:	
Biology, Chemistry, Physics, Geoscience	
<b>3. Social Sciences</b> .....	48
History Electives .....	12
(Recommended: Hist. 101-102 — Western Civilization, Hist. 131-132 — History of the U.S.)	
Anthropology Electives .....	6

(Recommended: Anth 200 — Social/Cultural Anthropology, Anth 242 — Native Cultures of Alaska)

Political Science Electives ..... 6  
 (Recommended: P.S. 101 — Introduction to Amer. Govt. and Politics, P.S. 263 — Alaska Native Politics)

Geography Electives ..... 6  
 (Recommended: Geog. 101 — Introductory Geography or Geog. 103 — World Economic Geography, Geog. 205 — Elements of Physical Geography)

Economics Electives ..... 6  
 (Recommended: Econ. 202 — Prin. of Econ. I, Econ. 201 — Prin. of Econ. II or Econ. 137 — The Alaskan Economy or Econ. 235 — Intro. to Natural Resource Economics)

Upper Division Social Science Electives ..... 12  
 Selected from the following areas (minimum of 9 credits in one area): History, Anthropology, Sociology, Geography, Political Science, Economics.

Minimum Credits Required ..... 130

**MINOR in Education — With or Without Teacher Credential Endorsement**  
 Bachelor of arts and bachelor of science degree candidates may use the credential endorsement requirement as a minor in Education. **STUDENTS MAY HAVE A MINOR IN EDUCATION WITHOUT STUDENT TEACHING BUT THEY MUST HAVE STUDENT TEACHING IF THEY WISH TO MEET CERTIFICATION REQUIREMENTS FOR TEACHING.**

All majors in other departments who wish to obtain an Alaska teaching certificate should confer with Department of Education to obtain course requirements and application procedures for admission to the Teacher Education Program. It is essential that the student have the necessary prerequisites and be admitted to the Teacher Education Program prior to acceptance for placement in student teaching in the public schools. Students may be endorsed for secondary certification only in majors which have been approved by the Alaska Department of Education.

**MINOR in Elementary Education (WITH credential endorsement):**

Credits

Psy. 240 — Developmental Psychology in Cross-Cultural Perspective ..... 3

Ed. 201 — Introduction to Education ..... 3

Ed. 304 — Literature for Children ..... 3

Ed. 330 — Diagnosis and Evaluation of Learning ..... 3

Ed. 375 — The Exceptional Learner ..... 3

Ed. 381 — Foundations of Literacy Development ..... 3

Ed. 419 — Integrated Methods and Curriculum Development ..... 6

Ed. 421 — Strategies for Reading and Writing Instruction in Multicultural Classrooms ..... 3

Ed. 452 — Elementary Student Teaching\* ..... 12

\* A minimum of 6 credits of math is required for admission to student teaching. (Math. 205 and 206 are recommended.)

One course from the following:

Ed. 345 — Sociology of Education ..... 3

Ed. 346 — Structure of American Education ..... 3

Ed. 350 — Communication in Cross-Cultural Classrooms ..... 3

Ed. 380 — Cultural Influences in Education ..... 3

Ed. 450 — Education and Cultural Transmission ..... 3

**MINOR in Elementary Education (WITHOUT credential endorsement):**  
 Complete the Elementary Education minor requirements excluding Ed. 452 - Elementary Student Teaching.

**MINOR in Secondary Education (WITH credential endorsement):**

Psy. 240 — Developmental Psychology in Cross-Cultural Perspective ..... 3

Ed. 201 — Introduction to Education ..... 3

Ed. 330 — Diagnosis and Evaluation of Learning ..... 3

Ed. 375 — The Exceptional Learner ..... 3

Ed. 402 — Methods of Teaching in the Secondary School ..... 3

Ed. 407 — Reading Strategies for Secondary Teachers ..... 3

Ed. 424 — Small High School Programs or ..... 3

Ed. 425 — Community as an Educational 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 Education ..... 3

Ed. 350 — Communication in Cross-Cultural Classrooms ..... 3

Ed. 380 — Cultural Influence in Education ..... 3

Ed. 450 — Education and Cultural Transmission ..... 3

**MINOR in Secondary Education (WITHOUT credential endorsement):**

Complete the Secondary Education minor requirements excluding Ed. 453 - Secondary Student Teaching.

**Admission to Student Teaching**  
 Retention in the teacher education program is contingent upon a second formal review prior to student teaching. This review will involve assessment of all criteria used for admission with the expectation that continued acceptable performance and/or appropriate growth will be noted in all areas. Applications for student teaching are due by October 1 or February 15 during the semester previous to the planned semester of student teaching. Placement for student teaching will proceed upon the determination that the application is acceptable.

- Criteria for Admission to Student Teaching**
- Elementary School — kindergarten through eighth grade:
    - Acceptance to the teacher education program.
    - A formal application on file with the director of the Office of Clinical Practice by October 1 for student teaching in the following spring semester and by February 15 for student teaching in the following fall semester.
    - A completed physical examination.
    - Completion of 100 credits leading to a bachelor's degree with a minimum g.p.a. of 2.00.
    - Completion of six credits in mathematics; Psy. 240, Ed. 330, 419 and 423.
    - A minimum grade of "C" in required math courses and in each required education course.
    - Approval of Committee on Admission to Teacher Education to enter student teaching.
    - A maximum of 15 credits is permitted while enrolled in student teaching. These 15 credits include the 12 credits granted for student teaching.
    - Those students who meet all of the above requirements at another university must take at least 9 credits of education courses at UAF.
    - Students who feel they have experience comparable to Student Teaching must demonstrate their competence. See the coordinator of the Office of Practica Experience regarding this procedure.

- Secondary Schools — seventh through twelfth grades:
  - Acceptance to the teacher education program.
  - A formal application on file with the director of the Office of Clinical Practice by **October 1** for student teaching in the following spring semester and by **February 15** for student teaching in the following fall semester.
  - A completed physical examination.
  - Completion of 100 credits leading to a bachelor's degree with a minimum g.p.a. of 2.00.
  - Completion of a minimum of 24 approved credits in an approved teaching major with a g.p.a. of 2.00 or more.
  - Completion of Psy. 240, Ed. 330, 402, 407 and 430.
  - A maximum of 15 credits is permitted while enrolled in student teaching. These 15 credits include the 12 credits granted for student teaching.
  - A minimum grade of "C" in each education course.
  - Approval of Committee on Admission to the Teacher Education Program to enter student teaching.
  - Those students who meet all of the above requirements at another university must take at least 9 credits of education courses at UAF.
  - Students who feel they have experience comparable to Student Teaching must demonstrate their competence. See the coordinator of the Office of Practica Experience regarding this procedure.

3. Students who fail Student Teaching will be exited from the Teacher Education Program. Further involvement with the Teacher Education Program is dependent upon a reapplication process. See the coordinator of the Office of Practica Experience regarding this procedure.

**Education — B.T. Degree\***  
 A certifiable secondary education program in the technical areas of: food services technology, aviation technology and electronics technology.

- Complete general university requirements and B.T. degree requirements.
- Complete the following major complex requirement beyond the associate degree major:

Credits

A. Upper-division credit in technical specialty ..... 0-6

B. Complementary area: Education

Psy. 240 — Developmental Psychology in Cross-Cultural Perspective ..... 3

Ed. 201 — Introduction to Education ..... 3

Ed. 330 — Diagnosis and Evaluation of Learning ..... 3

Ed. 375 — The Exceptional Learner ..... 3

Ed. 402 — Methods of Teaching in the Secondary School or Subject Area Methods course ..... 3

Ed. 407 — Reading Strategies for Secondary Teachers.....	3
Ed. 424 — Small High School Programs or	
Ed. 425 — Community as an Educational Resource.....	3
Ed. 430 — Multicultural Teaching Techniques.....	3
Ed. 453 — Secondary Student Teaching.....	12
Education Foundation Elective.....	3
3. Minimum credits required for degree.....	130

### 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 Department of Education.

#### Admission Requirements for M.Ed. Degrees:

Minimum requirements for admission to the M.Ed. program are: a bachelor's degree, with a minimum of 24 credits of education courses with an average GPA of 3.00, and one year of satisfactory teaching experience or administrative experience in public schools or appropriate experience.

Application for admission must be made to graduate study through the Admissions and Records office and consists of submitting the following:

1. A completed and signed application form.
2. All transcripts of college credits earned.
3. Three letters of reference.
4. A 4-5 page written essay containing a critical self-evaluation of past educational experiences, a discussion of career goals and the reasons for choosing to apply to the UAF Department of Education.
5. Admission may also be contingent upon a satisfactory interview with members of the department faculty. The interview may be conducted by audioconference.

#### Minimum Degree Requirements:

1. Complete the general university requirements and master's degree requirements.

2. Complete the following core requirement:

Ed. 601 — Introduction to Educational Research.....	3
Ed. 602 — Design and Practice of Educational Research.....	3
Ed. 610 — Education and Cultural Processes.....	3
Ed. 690 — Seminar in Cross-Cultural Studies.....	3
Ed. 698/699 — Project/Thesis.....	6

3 credits from the following:

Psy. 670 — Advanced Cross-Cultural Psychology	
Ed. 612 — Cultural and Phil. Foundations of Education	
Ed. 615 — Social Organization of Classrooms and Learning	
Ed. 620 — Language, Literacy and Learning.....	3

3. Complete a minimum of 15 credits from one of the following areas of specialization to be selected in consultation with the student's advisory committee:

Cross-Cultural Education  
Curriculum and Instruction  
Educational Leadership  
Language and Literacy

4. A presentation of a synthesizing paper upon completion of the 18 credit core program.
5. A project or thesis.
6. Presentation of project or thesis results.

Note: The course work must meet the following conditions:

- A. A total of 36 credits must be completed beyond the baccalaureate degree.
- B. A minimum of 30 semester hours must be at the 600 level.
- C. A minimum of 15 credits completed on the Fairbanks campus.
- D. No more than 9 semester credits can be transferred from other institutions.
- E. No more than 9 semester hours earned at UAF before admission to the M.Ed. program can count toward the degree.
- F. A minimum of 6 credits must be completed in a field-setting for students in the Cross-Cultural specialization.

Note: The candidate and his/her committee will meet a minimum of three times during his/her program. The initial meeting will take place concurrently with the student achieving 12 credits of graduate study. The interim meeting will take place for the purpose of discussing and developing the synthesizing paper. The final meeting will be for the purpose of discussion of the project. Advancement to candidacy for the M.Ed. will occur after the completion of 18 credits and a satisfactory synthesizing paper.

### Type B Administrative Certificate Admission Requirements

Admission to the State of Alaska, Type B Certification program is accomplished by applying for graduate study at UAF through Admissions and Records, and indicating that the application is for the Department of Education, Type B Administration Certificate only. Applicants to the M.Ed. in Educational Leadership may apply concurrently for the Type B Principal Certificate. (To attain both the M.Ed. and Certification require 42 hours of course work.) Applicants who apply for the Certificate with a Principal's Endorsement must have a master's degree. Applicants who apply only for the Superintendent's Endorsement must have an Ed.S. or doctorate. Certification is granted by the state upon recommendation of the UAF Department of Education. Upon admission, students will be assigned an adviser who will oversee their course program and internship.

#### Minimum Certification Requirements

1. A master's degree.
2. Three years of successful public school experience.
3. A Principal or Superintendent internship, depending on which certificate is being sought (Ed. 664 or Ed. 665).
4. Complete the following courses:
  - \*\*Ed. 630 — Curriculum Theory or
  - \*\*Ed. 631 — Small Schools Curriculum Design..... 3
  - \*\*Ed. 650 — Organizational Behavior in Schools..... 3
  - \*\*Ed. 651 — Large and Small School Management Processes..... 3
  - \*\*Ed. 652 — Effective Schooling Practices..... 3
  - \*\*Ed. 653 — Instructional Leadership in Public Schools..... 3
  - \*\*Ed. 654 — School Law..... 3
  - \*\*Ed. 660 — Educational Administration in Cultural Perspective..... 3
  - \*\*Ed. 664 — Internship: Principal's Endorsement or
  - Ed. 665 — Internship: Superintendent's Endorsement..... 3
  - Ed. 691 — Contemporary Issues in Education..... 3
5. A minimum of 9 credit hours, including Ed. 660, must be completed at UAF.

#### Education — Ed.S. Degree

The Ed.S. degree is designed for teachers and other educators (1) who wish to undertake graduate study beyond the master's degree; (2) who wish to qualify for an intermediate degree between the master's and the doctorate; (3) who wish to develop further competence in one field of specialization.

#### Admission Requirements:

1. Applicants must be experienced educators who have successfully completed at least three years of professional teaching, counseling or administrative experience.
2. A master's degree is required and should be in a field which provides an appropriate foundation for the additional graduate study.
3. Admission will be contingent upon:
  - a. Minimum g.p.a. of 3.00 in previous graduate work
  - b. Acceptable scores on the Graduate Record Examination: Aptitude test and the advanced test in Education (or, permission of Admissions committee)
  - c. A satisfactory review conducted by admissions committee of the education department (may include a personal interview by the committee).

#### Degree Requirements

1. The minimum requirements will be the completion of 36 semester hours beyond the master's degree level. The student may transfer up to 9 hours from another university into her/his program.
2. Fulfillment of the requirements of the Ed.S. degree must be completed within seven years after first registering in the program.
3. Satisfactory performance on written and oral examination conducted by the Department of Education faculty is required.
4. At least 30 of the 36 semester hours must be at the graduate level (600).

#### Specific Course Requirements

Courses will be selected in consultation with the student's advisory committee and will depend upon the student's prior training and field of specialization. Candidates will be required to have a total background of at least 60 semester hours beyond the baccalaureate degree as outlined in the following course requirements:

1. Common core requirements for all Educational Specialist candidates (if the following courses were completed as part of a Master's program, they may not be applied toward the Education Specialist Degree.
  - A. Course work (12 semester hours)

Ed. 601 — Introduction to Educational Research.....	3
Ed. 610 — Education and Cultural Processes.....	3
Ed. 612 — Cultural and Philosophical Foundations of Education.....	3
Ed. 690 — Seminar in Cross-cultural Studies (to be taken upon completion of minimum of 24 hours of graduate study).....	3

- B. Field Study or Internship (minimum of 6 semester hours)

Credit

Under the guidance of the student's graduate committee, each candidate will design a field research and/or internship project for a specific school district or rural area. The student will prepare the design at UAF; and, will live in the community for one semester in the internship gathering data. Each student will submit a written report on his/her findings and will defend the report and conclusion in an oral examination before his/her committee.

A research design may include the following tools of research: analysis of cumulative records, questionnaires, sociometric techniques, interviews with open-ended questions, analysis of test scores, analysis of textbooks, observation of teaching and administrative techniques, participant observation in the school and community, and rating scales.

2. Educational Specialist area of specialization and concentration (minimum of 18 semester hours).

A. Public School Administration (Public School Superintendent Credential Endorsement):

1. Admissions Requirement

Minimum of one year of school administration experience is required for admission to this concentration. The credential, however, can be recommended only upon completion of the prescribed Ed.S. program and three years of school administration experience.

2. The following courses are required for this specialization (may substitute equivalent graduate courses approved by candidate's committee):

	<i>Credits</i>
Ed. 650 — Organizational Behavior in Schools .....	3
Ed. 651 — Large and Small School Management Processes .....	3
Ed. 652 — Effective Schooling Practices .....	3
Ed. 654 — School Law .....	3
Ed. 655 — Public School Finance .....	3
Ed. 660 — Educational Administration in Cultural Perspective .....	3

3. Recommended courses to provide specialization depth:

- ANS 430 — Alaska Native Education
- ANS 475 — Alaska Native Social Changes
- B.A. 651 — Organizational Behavior
- Econ. 427 — Collective Bargaining
- Ed. 615 — Social Organization of Classrooms and Learning
- Ed. 630 — Curriculum Theory
- Soc. 405 — Social Change
- Soc. 407 — Formal Organizations

B. Cross-cultural studies area of specialization and concentration:

1. Admissions Requirement

Applicant should have a Master's degree in an approved area of study determined by the Education Department's admissions committee. The committee may recommend provisional admittance based on applicant's eliminating deficiencies.

2. The following courses are required for this specialization (may substitute equivalent graduate courses approved by candidate's committee)

	<i>Credits</i>
Ed. 602 — Design and Practice of Educational Research .....	3
Ed. 612 — Cultural and Philosophical Foundations of Education .....	3
Ed. 615 — Social Organization of Classrooms and Learning .....	3
Ed. 620 — Language, Literacy and Learning .....	3
Ed. 611 — Learning, Thinking and Perception in Cultural Perspective .....	3

3. Recommended courses to provide specialization depth:

- ANS 430 — Alaska Native Education
- ANS 475 — Alaska Native Social Change
- Ed. 621 — Cultural Aspects of Language Acquisition
- Ed. 630 — Curriculum Theory
- Ed. 660 — Educational Administration in Cultural Perspective
- Electives: 600 level courses approved by candidate's committee

**Interdisciplinary Studies** — Students are encouraged to develop interdisciplinary degree programs through the Department of Education.

## Electrical Engineering

### School of Engineering

#### Department of Electrical Engineering

Degrees: B.S., M.E.E., M.S.

Minimum Requirements for Degrees: B.S. — 133 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, magnetohydrodynamics, 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 our 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.

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.

Graduate students whose goal is broad professional practice will ordinarily choose the M.E.E. program; those who wish to emphasize research and advanced specialized study usually elect the M.S. degree program, which includes a thesis.

## 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. At least 6 of the 16 social science and humanities elective credit must be: (a) above the 100 level; or (b) advanced courses in a 100 level sequence. Sufficient depth in at least one of the areas must be demonstrated by evidence of a sequence of courses. This sequence must be approved by the students' departmental advisor.

#### First Year

<i>Fall Semester</i>	<i>16 credits</i>
Engl. 111 — Methods of Written Comm. ....	3
Math. 200 — Calculus .....	4
E.S. 101 — Descriptive Geometry for Engineers .....	2
Soc. Sci. or Humanities Elective* .....	3
Chemistry 105 — General Chemistry .....	4

#### Spring Semester

Speech Comm. Elective .....	<i>17 credits</i>
Math. 201 — Calculus .....	4
E.E. 102 — Intro. to Electrical Engineering .....	3
Chem. 106 — General Chemistry .....	4
Soc. Sci. or Humanities Elective .....	3

#### Second Year

<i>Fall Semester</i>	<i>15 credits</i>
Math 202 — Calculus .....	4
Phys. 211 — General Physics .....	4
E.S. 201 — Computer Techniques .....	3
E.E. 203 — Fund. of Elec. Engineering .....	4

#### Spring Semester

Math 302 — Differential Equations .....	<i>15 credits</i>
Phys. 212 — General Physics .....	4

E.S. 208 — Mechanics.....	4
E.E. 204 — Fund. of Elec. Engineering.....	4

**Third Year**

<i>Fall Semester</i>	17 credits
E.E. 333 — Physical Electronics.....	4
E.E. 353 — Circuit Theory I.....	3
Approved Math Elective**.....	3
Soc. Science or Humanities elective.....	3
Option I: Communications	
E.E. 311 — Applied Engineering Electromagnetics.....	3
E.E. 331 — High Frequency Lab.....	1
Option II: Power and Control	
E.E. 303 — Electrical Machinery.....	4
Option III: Computer Engineering	
E.E. 442 — Digital Syst. Anal. & Design I.....	4

<i>Spring Semester</i>	18 credits
E.E. 334 — Electronic Circuit Design.....	4
E.E. 354 — Engineering Signal Analysis.....	3
Engl. 211 — Intermediate Exposition, with Modes of Literature or	
Engl. 213 — Intermediate Exposition.....	3
E.E. 471 — Fundamentals of Automatic Control.....	4
Option I: Communications	
E.E. 312 — Electromagnetic Waves and Devices.....	3
E.E. 332 — Electromagnetics Laboratory.....	1
Option II: Power and Control	
E.E. 404 — Electric Power Systems.....	4
Option III: Computer Engineering	
E.E. 443 — Digital Systems Analysis and Design II.....	4

**Fourth Year**

<i>Fall Semester</i>	18 credits
Soc. Science or Humanities Elective.....	3
Option I: Communications	
Approved Engineering Science Elective***.....	3
E.E. 303 — Electrical Machinery.....	4
E.E. 442 — Digital Systems Analysis and Design I.....	4
E.E. 461 — Communications Systems.....	4
Option II: Power and Control	
Approved Engineering Science Elective***.....	3
E.E. 311 — Applied Engineering Electromagnetics.....	3
E.E. 331 — High Frequency Lab.....	1
E.E. 406 — Electrical Power Engineering.....	4
E.E. 442 — Digital Systems Analysis and Design I.....	4
Option III: Computer Engineering	
E.E. 303 — Electrical Machinery.....	4
E.E. 311 — Applied Engineering Electromagnetics.....	3
E.E. 331 — High Frequency Lab.....	1
E.E. 451 — Digital Signal Processing.....	3
E.E. 461 — Communications Systems.....	4

<i>Spring Semester</i>	17 credits
E.S.M. 450 — Economic Analysis and Operation.....	3
Soc. Science or Humanities Electives.....	4
Approved Engineering Science Elective***.....	3
Approved E.E. Elective.....	3-4
Approved E.E. Design Elective.....	3-4
Must take State of Alaska Engineer-in-Training Examination	

\*Social Science/Humanities elective and E.S. 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 E.S. 331, E.S. 341 and E.S. 346.

**Electrical Engineering — M.E.E. Degree**

The M.E.E. is structured to be a terminal degree for the practicing professional engineer.

Those entering the master of electrical engineering degree program should have completed a bachelor degree in electrical engineering. Students with bachelor degrees in other fields should work out a program to remove background deficiencies with their graduate committee.

Thirty-two credits of courses beyond the B.S. degree approved by a student's graduate committee must be completed, as well as general university requirements. At least 26 credits must be at the 600 level. Courses may be selected from electrical engineering and related fields. A research project is not required, although six credit hours of research may be allowed under special circumstances. The M.E.E. is structured for completion in two semesters. Candidates for the M.E.E. degree must pass the fundamentals of engineering examination made available by the Alaska State Board of Registration. Candidates must also pass a written and oral comprehensive examination in the final semester of study.

**Electrical Engineering — M.S. Degree**

Those entering the master of science in electrical engineering degree program should have completed a bachelor degree in electrical engineering. Students with bachelor degrees in other fields should work out a program to remove background deficiencies with their graduate committee.

Thirty credits of courses beyond the B.S. degree approved by a student's graduate committee must be completed, as well as general university requirements. At least 24 credits, including thesis and research must be at the 600 level. Courses may be selected from electrical engineering and related fields. A thesis must be completed, carrying a maximum of 12 credits.

Candidates for the M.S. degree in electrical engineering must pass the fundamentals of engineering examination made available by the Alaska State Board of Registration. Candidates must also pass a written and oral comprehensive examination in the final semester of study.

## Engineering Management

**School of Engineering****Department of Engineering and Science Management**

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 previous degree in an engineering discipline. (See also "Science Management".)

### Requirements

**Engineering Management — M.S. Degree**

1. Complete the general university requirements and master's degree requirements.

2. Complete the following degree and program (major) requirements:

a. Nine credits, including.....	9
1. ESM 601 — Engineers in Organizations	
2. ESM 609 — Project Management	
or	
BA 643 — Marketing Management*	
3. A third course chosen from	
BA 643 — Marketing Management*	
ESM 608 — Legal Principles for ESM	
(with new description)	
ESM 609 — Project Management	
BA 661 — Human Resource Management*	
b. Six credits, chosen from.....	6
ESM 605 — Engineering Economy	
Acct. 603 — Financial Accounting Concepts for Administrators*	
BA 625 — Financial Management*	
If a student has had a course in engineering economy, Acct. 602 and BA 625 may be taken; otherwise, ESM 605 and Acct. 602 are required.	
c. Six credits, chosen from.....	6
ESM 620 — Statistics for ESM	
ESM 621 — Operations Research	
BA 605 — Management Information Systems*	
d. ESM 684 — Project.....	3
e. Nine credits of electives in the student's technical specialty.....	9
TOTAL.....	32

\*No more than twelve (12) credits may be taken in the School of Management.

In addition to completing the 33 credits indicated above, a candidate must demonstrate competence in computer programming by passing a programming course or a qualifying examination.

Substitutions for one or more of the courses listed above are permitted if similar courses are included in the student's previous academic

background. No more than nine credits of appropriate graduate-level course work completed at other institutions with a grade of A or B may be transferred and applied toward the total 33 credits of required and elective courses. Both substitutions and transfer of credit must be approved by the department. At least 24 credits, including thesis or research, must be at the 600 level.

## English

### College of Liberal Arts Department of English

Degrees: B.A., M.A.

Minimum Requirements for Degrees: B.A. — 130 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.

The Department of English offers two graduate degrees. 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 non-fiction. Both degree programs require 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. After being admitted to either of the degree programs, a graduate student may apply for one of the department's teaching assistantships.

## 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 111 and English 211 or 213, including:

Credits

- a. Engl. 301 — Continental Literature in Translation:  
From the Ancient World through the Renaissance ..... 3  
Engl. 310 — Literary Criticism ..... 3
- b. Complete the following surveys of British and American Literature:

#### American Literature:

Engl. 306 — Survey of American Literature ..... 3

#### British Literature:

Engl. 308 — Survey of British Literature: Beowulf to the Romantic Period ..... 3  
Engl. 309 — Survey of British Literature: Romantic Period to the Present ..... 3

#### c. 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

#### e. One course from the following:

Engl. 318 — Modern English Grammar  
Engl. 462 — Applied English Linguistics  
Engl. 472 — History of the English Language ..... 3

f. Four courses chosen from 300-400 levels in English with at least two courses on 400 level ..... 12

3. Minimum Credits Required ..... 130

### 3. 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 111 and English 211 or 213 including:

Credits

a, b, c, and d as listed in the requirements for a major with emphasis on literature ..... 21

#### e. Two courses from the following:

Engl. 444 — Fiction in Translation  
Engl. 445 — 20th Century Drama: From Chekhov to Ionesco  
Engl. 446 — Major Modern and Contemporary Poetry  
Engl. 447 — 20th Century British Prose  
Engl. 448 — 20th Century American Prose  
Engl. 452 — The British Novel to 1900 ..... 6

f. Engl. 313 — Writing Non-Fiction Prose ..... 3  
Engl. 371 — Intermediate Creative Writing ..... 3

g. One course chosen from 300-400 English Department Courses ..... 3

3. Minimum Credits Required ..... 130

### 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 111 and English 211 or 213, including:

Credits

a. Same as listed under a, b, and d for literature emphasis ..... 18  
b. Engl. 318 — Modern English Grammar ..... 3  
Engl. 472 — History of the English Language ..... 3

c. Engl. 313 — Writing Non-Fiction Prose ..... 3  
Engl. 485 — Teaching Composition in the Schools ..... 3

d. Two elective courses from the following ..... 6  
All 300-level English, Engl. 444, 445, 446, 447, 448, or 462

3. Minimum Credits Required ..... 130

### MINOR in English:

a, b, c, and d as listed in the requirements for a major with emphasis on literature ..... 21

### English — M.A. Degree

1. Complete the general university requirements and master's degree requirements.
2. Complete a minimum of 30 approved credits on the 600 level, distributed as follows:

Credits

Engl. 601 — Bibliography, Meth., and Criticism ..... 3  
Six courses in English chosen in consultation with and approved by the graduate committee ..... 18

(Extra course required if student does not take Engl. 685).

Engl. 685 — Teaching College Composition (if a graduate assistant or planning to teach) ..... 3  
Engl. 699 — Thesis ..... 6

3. Advancement to candidacy will be based upon finding by student's advisory committee that student has made satisfactory progress toward completion of the degree.

4. Pass a written comprehensive examination based on a standardized reading list; examination to be taken no later than student's third semester of work. Examination will be held on the Saturday ending the fourth full week of classes.

5. Pass an oral defense of the thesis.

English — M.F.A. Degree: see "Creative Writing"

## 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 will 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.



## Requirements

### Environmental Quality Engineering — M.S. Degree Environmental Quality Science — M.S. Degree

1. Complete the general university requirements and master's degree requirements.

2. Complete the following degree and program (major) requirements:

	<i>Credits</i>
EQE 601 — EQE Measurements.....	3
EQE 602 — Engr. Mgmt. of Water Quality.....	3
EQE 603 — Solid Waste and Air Pollution.....	3
EQE 604 — Environ. Quality Evaluation.....	3
EQE 605 — C/P Processes.....	3
EQE 606 — Biological Treatment Processes.....	3
*EQE 693 — Special Topics.....	0-3
*EQE 697 — Individual Study.....	0-6
*EQE 698 — Research/Special Project.....	3
*EQE 699 — Thesis.....	0-6
*Electives.....	6-9

\*Electives, thesis, and/or special projects must have approval of graduate committee.

A minimum of 30 credits of approved and required courses must be completed. Thesis study (6 credits) is optional. At least 24 credits, including thesis and/or research, must be at the 600 level.

#### Thesis Option:

Thesis.....	6
Required courses.....	18
Electives.....	6

#### Non-Thesis Option:

Special Project.....	3
Required courses.....	18
Electives.....	9

All science majors will be expected to have completed a formal course in computer programming, either BASIC or FORTRAN, and introductory calculus, with a minimum grade of B. For those students not meeting this requirement, it will be treated as a deficiency.

## 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:

	<i>Credits</i>
Esk. 111-112 — Elementary Inupiaq Eskimo.....	10
Esk. 211-212 — Intermediate Inupiaq Eskimo.....	6
ANL 215 — Eskimo-Aleut Languages.....	3
Esk. 417 — Advanced Inupiaq Eskimo.....	3
Ling. 101 — The Nature of Language or ANS 320 — Language and Culture.....	3

Complete three of the following:

Esk. 417 — (Additional) Adv. Inupiaq Eskimo.....	3
ANL 387 — Bilingual Methods and Materials.....	3
Anth. 242 — Native Cultures of Alaska.....	3
Anth. 380 — Peoples of Alaska Southwest.....	3
Anth. 381 — Inupiaq and Yup'ik People.....	3
Hist. 110 — History of Alaska Natives.....	3
P.S. 263 — Alaska Native Politics.....	3
Engl. 349 — Narrative Art of Alaska Native Peoples (in English translation).....	3
Ling. 318 — Phonology.....	3
Ling. 320 — Syntax.....	3
Ling. 410 — Second Language Teaching.....	3
Ling./Ed. 303 — Language and Literacy Development.....	3
Ling. 350 — Historical Linguistics.....	3
Ling. 450 — Language Policy and Planning.....	3
ANL 216 — Indian Languages of Alaska.....	3
A course in Yupik Eskimo or other approved subject.....	3
Mus. 223 — Native Alaskan Music.....	3
3. Minimum Credits Required.....	130

### Yupik Eskimo — B.A. Degree

1. Complete general university requirements and B.A. degree requirements.
2. Complete the following program (major) requirements:

	<i>Credits</i>
Esk. 101-102 — Elementary Yupik Eskimo.....	10
Esk. 201-202 — Intermediate Yupik Eskimo.....	6
Esk. 301 — Advanced Yupik Eskimo.....	3
Esk. 415 — Additional Topics in Advanced Yupik Eskimo.....	3
ANL 215 — Alaska Native Languages.....	3
Ling. 101 — Nature of Language or ANS 320 — Language and Culture.....	3

Complete two of the following:

ANL 387 — Bilingual Methods and Materials.....	3
Anth. 242 — Native Cultures of Alaska.....	3
Anth. 380 — Peoples of Alaska Southwest.....	3
Anth. 381 — Inupiaq and Yup'ik People.....	3
Hist. 110 — History of Alaska Natives.....	3
P.S. 263 — Alaska Native Politics.....	3
Engl. 349 — Narrative Art of Alaska Native Peoples (in English translation).....	3
Ling. 303/Ed. 303 — Language and Literacy Development.....	3
Ling. 318 — Intermediate Phonetics and Phonology.....	3
Ling. 320 — Introductory Syntactic Theory.....	3
Ling. 350 — Historical Linguistics.....	3
Ling. 450 — Language Policy and Planning.....	3
ANL 216 — Indian Languages of Alaska.....	3
A course in Inupiaq Eskimo or other approved subject.....	3
Mus. 223 — Native Alaskan Music.....	3
3. Minimum Credits Required.....	130

### MINOR in Eskimo

A minor in Eskimo requires 15 credits in Eskimo.

## Financial Institutions Management

### School of Career and Continuing Education

#### Business Systems and Technology Department

Degree: A.A.S.

Minimum Requirements for Degree: 60 credits

The financial institutions management program is designed to meet the specific training needs of local financial institutions. This program was developed with the assistance of local industry leaders and representatives from the American Institute of Banking. Therefore, associate of applied science degree parallels the skills, training and educational standards set by the AIB.

The financial institutions management degree curriculum focuses on business and banking in addition to some specific technical areas. Graduates of this program will be prepared to pursue many career paths in financial institutions management.

## Requirements

### Financial Institutions Management — A.A.S. Degree

1. Complete the following general degree requirements:

Written Communications.....	3
(Engl. 111 required)	
Oral Communications.....	3
Select a total of 6 credits from the following areas:	
Humanities or	
Social Science or	
Math or	
Natural Science.....	6
Subtotal.....	5

2. Complete the following major degree requirements:

ABUS 142 — Office Accounting I.....	2
ABUS 160 — Principles of Banking or	
ABUS 161 — Foundations and Structures of Credit Unions.....	3
ABUS 165 — Consumer Lending.....	3
ABUS 179 — Fundamentals of Supervision.....	3
ABUS 180 — Commercial Lending.....	3
ABUS 181 — Law and Banking Applications.....	3
ABUS 224 — Money and Banking.....	3
ABUS 240 — Business Law.....	3
CAPS 150 — Computer Business Applications.....	3
Economics.....	3
OP 231 — Business Communications.....	3
Subtotal.....	32

3. Complete the following major specialty electives:

Select 12 credits from the following:	
ABUS 166 — Residential Mortgage Lending.....	3

ABUS 167 — Branch Management.....	3
ABUS 223 — Real Estate Finance.....	3
ABUS 234 — Financial Counseling.....	3
ABUS 244 — Loan Officer Development.....	3
ABUS 261 — Analyzing Financial Statements.....	3
Subtotal.....	12
4. General Elective Credit.....	1
Degree Total.....	60

## Fisheries Science

### School of Fisheries and Ocean Sciences Program in Fisheries

Degrees: B.S., M.S.

Minimum Requirements for Degrees: B.S. — 130 credits; M.S. — 30 additional credits

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 phases 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 for Fisheries and Ocean Science houses the UAF Fisheries Science Program in southeast Alaska.\* JCFOS has well-equipped labs and a 42-foot research vessel. It is located near the Auke Bay National Marine Fisheries Laboratory. Faculty with JCFOS were associated with the University of Alaska Juneau (now the University of Alaska Southeast) prior to this year. Students matriculating at Juneau can also register for UAS courses.

Students from both locations have an opportunity for association with personnel of federal and state conservation agencies and these agencies hire a number of students for summer field work.

\* Juneau students should also reference the University of Alaska Southeast catalog.

## Requirements

### Fisheries Science — B.S. Degree

1. Complete the general university requirements including:

English 111 and 213.....	Credits	6
Speech Communication (Sp. C. 131 or 141).....		3
Social Science & Humanities (excluding social science and humanities courses in program requirements).....		15

2. Complete the following degree and program (major) requirements:

#### A. Core Courses:

General (32 credits)		
A.L.R. 101 — Conservation of Natural Resources.....		3
Engl. 414 — Research Writing.....		3
Stat. 301 — Elementary Prob. and Stat.....		3
Chem. 105, 106 — General Chemistry.....		8
*Math. 272, 273 — Intro. to Calculus for Life. Sci.....		6
Econ. 235 — Natural Resource Econ.....		3
C.S. 201 — Computer Programming I.....		3
Geog. 205 — Elements of Physical Geography.....		3
Biology (24 credits)		
Biol. 105, 106 — Fundamentals in Biol. I and II.....		8
Biol. 271 — Principles of Ecology.....		4
Biol. 210 — Animal Physiology.....		4
Biol. 362 — Principles of Genetics.....		4
Biol. 423 — Ichthyology.....		4
Fisheries (11 credits)		
Biol. 473 — Limnology.....		3
or		
Biol. 328 — Biology of Marine Organisms.....		3
Fish. 429 — Intro. to Fisheries Science.....		3
Fish. 430 — Fisheries Management.....		3
Biol. 424 — Biol. of Freshwater Fish of Alaska.....		3

\*or Math 200, 201, & 202 — Calculus

#### B. Electives:

Take one course from each of the following groups of courses:

Group 1 (3-5 credits)		Credits
Biol. 342 — Microbiology.....		4
Biol. 307 — Parasitology.....		3
Biol. 442 — Bacteriology and Immunology.....		5
Group 2 (3-5 credits)		
Biol. 222 — Biology of the Vertebrates.....		4
Biol. 205 — Vertebrate Anatomy.....		3
Biol. 317 — Comparative Anatomy of Vertebrates.....		5
Group 3 (3 credits)		
Biol. 472 — Communities and Ecosystems.....		3
Biol. 471 — Population Ecology.....		3
Biol. 328 — Biology of Marine Organisms (if used here, cannot satisfy fisheries core course requirements).....		3
Biol. 477 — Ecology of Streams and Rivers.....		3
Group 4 (3-4 credits)		
Biol. 305 — Invertebrate Zoology.....		4
Biol. 406 — Entomology.....		4
Biol. 407 — Aquatic Entomology.....		3
Group 5 (3 credits)		
Biol. 480 — Water Pollution Biology.....		3
A.L.R. 370 — Introduction Watershed Management.....		3

C. Option — Complete the requirements for one of the following options:

#### Research Option:

Credits

Choose 6-8 credits from the courses listed below:

Stat. 401 — Intro. to Exp. Design (4 credits)	
Stat. 402 — Scientific Sampling (3 credits)	
Chem. 212 — Intro. Quant. Analysis (4 credits)	
Chem. 321-322 — Organic Chem. (3/3 credits)	
Chem. 324 — Organic Lab. (3 credits)	
C.S. 202 — Computer Programming II (3 credits)	
Geos. 304 — Geomorphology (3 credits)	
Phys. 103-104 — College Physics (3 credits)	

In addition, any electives needed to bring total credits to 130.

#### Management Option:

1. Take one of the following: (3 credits)		Credits
ALR 400 — Natural Resources Policies.....		3
ALR 401 — Natural Resources Legislation.....		3
2. Take four courses from the following: (12 credits)		
Geog. 302 — Geography of Alaska.....		3
Geog. 402 — Man and Nature.....		3
**]-B 101 — Intro. to Mass Communication.....		3
**]-B 311 — Magazine Article Writing.....		3
Anth. 242 — Native Cultures of Alaska.....		3
P.S. 201 — Comp. Politics: Methods of Political Analysis.....		3
P.S. 263 — Alaska Native Politics.....		3
P.S. 211 — State and Local Government.....		3
P.S. 212 — Intro. to Public Administration.....		3
P.S. 302 — Congress and Public Policy.....		3
Soc. 309 — Urban Sociology.....		3
B.A. 301 — Processes of Management.....		3
B.A. 361 — Personnel Managements.....		3
*Econ. 438 — The Economics of Fisheries Management.....		3
3. Take one of the following: (2-3 credits)		
WLF. 303 — Wildlife Management Techniques.....		3
WLF. 417 — Wildlife Management - Forest and Tundra.....		2
WLF. 419 — Waterfowl and Wetlands Ecology and Management.....		3

In addition, any electives needed to bring total credit hours to 130.  
Minimum credits required..... 130

\*Note prerequisite.

\*\*Maximum of 3 credits may be used to satisfy the management option.

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 Science — M.S. Degree

1. Complete general university requirements for master's degree.  
2. The following core courses or their equivalent are required:

		Credits
Fish. 630 — Quantitative Fisheries Science.....		3
Biol. 650 — Fish Ecology		
or OCN 640 — Fisheries Oceanography.....		3
Biol. 473 — Limnology		
or OCN 650 — Biological Oceanography.....		3

In addition to the core courses, complete those as stipulated by the student's Graduate Advisory Committee and a thesis (Fish. 699)

for a minimum total of 30 credits. At least 24 credits, including Thesis and/or Research, must be at the 600 level. All students are required to successfully complete the Graduate Comprehensive Examination.

The program offers a limited number of research assistantships under various federal and state government funding programs. Graduate studies are also sponsored by the Alaska Cooperative Fishery Research Unit; inquiries should be directed to the unit leader.

## Foreign Languages

### College of Liberal Arts

#### Department of Foreign Languages and Literatures

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 requirements.
2. Complete the B.A. degree requirements.
3. Complete the following program (major) requirements:

I. Background-related Requirements..... 24

#### Option A Liberal Arts Option

- a. Ling. 101 — Nature of Language  
or Ling. 216 — Languages of the World ..... 3  
Hum. 201 — Unity in the Arts ..... 3  
Hum. 202 — Unity in the Sciences ..... 3  
Hum. 411 — Dimensions of Literature ..... 3
- b. 6 credits in literature courses other than those of the field of specialization ..... 6
- c. 6 credits from among the following:  
Phil. 201 — Introduction to Philosophy ..... 3  
Hist. 101, 102 — Western Civilization ..... 3  
Hist. 315 — Europe 1914-1945 ..... 3  
Art 261 or 262 — History of World Art ..... 3  
Geog. 305 — Geography of Europe (except U.S.S.R.) ..... 3  
Geog. 402 — Man and Nature ..... 3

#### Option B (Career-oriented Option)

- a. Ling. 101 The Nature of Language  
or Ling. 216 — Languages of the World ..... 3
- b. 21 credits in major-related courses in other disciplines, such as business, education, journalism, political science, etc. (to be specified by the advisor according to the student's career preferences) .. 21

II. Major Requirements (two languages required) First Language (French, German or Spanish) (above 100 level) ..... 24

#### Complete the following courses:

- |                 |                 |
|-----------------|-----------------|
| 201 — 3 credits | 387 — 2 credits |
| 202 — 3 credits | 432 — 3 credits |
| 288 — 2 credits | 487 — 2 credits |
| 301 — 3 credits | 488 — 3 credits |
| 303 — 3 credits |                 |

Second Language (French, German, Russian or Spanish) (above 100 level) ..... 13

#### Complete the following courses:

- |                 |                        |
|-----------------|------------------------|
| 201 — 3 credits | 301 or 303 — 3 credits |
| 202 — 3 credits | 387 — 2 credits        |
| 288 — 2 credits |                        |

Second Language (Japanese) (above 100 level) ..... 14

#### Complete the following courses:

- |                 |                 |
|-----------------|-----------------|
| 201 — 4 credits | 202 — 4 credits |
| 301 — 3 credits | 302 — 3 credits |

Where appropriate, courses listed under I and II may be counted toward fulfillment of B.A. requirements listed under 2.

4. Minimum credits required ..... 130

## MINOR in Foreign Languages

A minor in a foreign language requires 12-21 credits. If all are at the 200 level or higher, 12 credits will fulfill this requirement.

## General Science

### College of Natural Sciences

#### Department of Physics

Degrees: B.S., M.S.

Minimum Requirements for Degrees: B.S. — 130 credits; M.S. — 30 additional credits

The major in general science has been designed, as its name indicates, to provide an opportunity to become familiar with a considerable number of natural sciences and thus provide a firm background for specialization in any one of them as well as in certain technical professions. The fields lying on the borders between the older sciences provide excellent opportunity for research. An acquaintance with the fundamentals of all the natural sciences is of value in teaching science in high school and college and also in preparing for specialization in certain of the social disciplines.

## Requirements

### General Science — B.S. Degree

1. Complete the general university requirements.
2. Complete the following degree and program (major) requirements:

#### First Year

<i>Fall Semester</i>	17 credits
Engl. 111 — Methods of Written Comm. ....	3
Math. 107-108 — Elementary Functions and Trigonometry .....	6
Chem. 105 — General Chemistry or Phys. 103 — College Physics .....	4
Biol. 105 — Fundamentals of Biology .....	4

#### Spring Semester

Speech Communication Elective .....	3
Math. 200 — Calculus .....	4
Chem. 106 — General Chemistry or Phys. 104 — College Physics .....	4
Biol. 106 — Fundamentals of Biology .....	4

#### Second Year

<i>Fall Semester</i>	17 credits
Phys. 103 — College Physics or Chem. 105 — General Chemistry .....	4
Econ. 201 — Principles of Economics I .....	3
Geos. 101 — 101L — General Geology .....	4
Psy. 101 — Intro. to Psychology .....	3
Department elective .....	3

#### Spring Semester

Phys. 104 — College Physics or Chem. 106 — General Chemistry .....	4
Geos. 112 — 112L — Historical Geology .....	4
Soc. 101 — Intro. to Sociology or Anth. 101 — Introduction to Anthropology .....	3
Electives .....	5

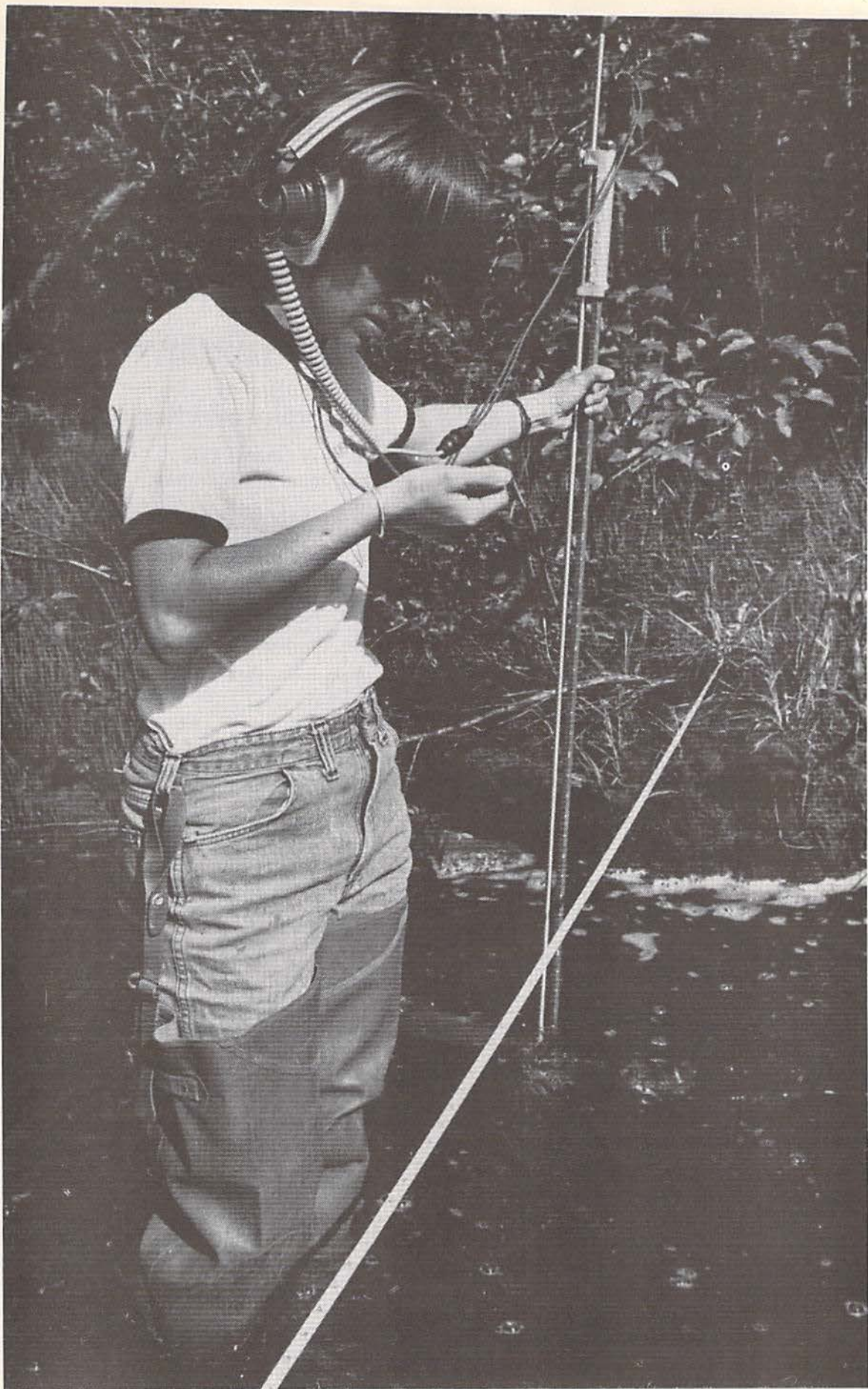
### Third and Fourth Years

By the beginning of his/her junior year, each student in general science must decide upon his/her major field and, with the assistance of the person in charge of administering the curriculum in general science, make out a program for his third and fourth years of study.

Directions for making out the program:

1. Include the following courses:
 

Engl. 211 — Intermed. Exposition with Modes of Literature or Engl. 213 — Intermed. Exposition .....	Credits
Social Science and/or Humanities electives (3 credits must be Humanities) .....	6
2. A major may be elected in anthropology, biological sciences, chemistry, geosciences, mathematics, or physics. Courses to be used to meet major requirements must be approved in writing not later than the beginning of the junior year and a copy of the approval must be filed with the Office of Admissions and Records. Although the minimum number of credits required for a general science major is 20, many of the majors require specific courses which total more than 20 credits. Therefore, a general science student should contact the head of the major department as early as possible to determine major requirements.
3. The electives must include either two minors of at least 12 credits each above the foundation courses included in the General Science curriculum, or a second major. Minors may be selected in any of the



Cathy Egan, a laboratory assistant in the Institute of Northern Engineering, measures the velocity of a stream north of Fairbanks on the Elliot Highway.

major departments listed or in the fields of economics, education (minimum 24 credits), English, French, German, Russian, history, or political science.

4. All prerequisites of courses elected must be met.

5. One year of German or Russian is recommended.

6. Courses selected to complete the requirements in the social sciences must be chosen from the following: anthropology except archeology; sociology; economics; history; and political science.

7. Physics 211-212 may alternate for Physics 103-104 and Chem. 212 may alternate for Chem. 105-106.

8. A minimum of 130 credits is required.

#### General Science — M.S. Degree

1. Complete the general university requirements 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 Departments of Mathematics, Physics, Chemistry, Biological Sciences and Geology offer work toward the master of science degree with a major in general science. 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 departments is cooperating with at least one other department 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 department giving the degree. A thesis (maximum of three credits) or project (no credit) must be completed in the major department. It is not intended that the individual courses 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.

## Geography

### College of Liberal Arts Department of Geography

Degrees: B.A., B.S.

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

The department offers undergraduate courses and degrees in geography and in geography and 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 24 credits in geography, including the following: Geog. 101 or 103; 205; 202 or 302; 339 or 401; 305 or 311; 306 or 327; 492; geography elective.

B. Complete 20 credits of the following or approved alternative courses with groupings to emphasize cultural, economic, physical, or regional geography. (Can also be used to meet basic degree requirements and to apply toward minor requirements.):

#### Cultural Geography

Anth. 101, 205, 206, 242, 321, 428  
Soc. 250, 307, 309, 363, 406

#### Economic Geography

Econ. 201, 235, 335, 437, 463

#### Physical Geography

Geos. 101, 112, 261, 304, 408, 422  
Biol. 271

A.L.R. 101, 350, 380, 430

#### Regional Geography

Hist. 261, 315, 316, 331, 341, 344, 350, 450  
P.S. 201, 315, 321, 322, 415, 435, 436, 480

C. Approved electives to complete 130 credits.

### Geography — B.S. Degree

1. Complete general university requirements and B.S. degree requirements, pages 25 and 26.

2. Complete the following program (major) requirements:

A. Complete 12 credits in approved mathematics courses.

B. Complete two minors.

C. Complete the requirements A, B, and C as stated above for the B.A. degree with emphasis in either economic or physical geography.

### MINOR in Geography:

A minor in geography requires 15 credits in geography including Geography 101 or 103 and 205.

## Geography and Regional Development

### College of Liberal Arts Department of Geography

Degree: B.A.

Minimum Requirements for Degree: 130 credits

## Requirements

### Geography and Regional Development — B.A. Degree

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

2. Complete the following program (major) requirements:

A. Complete 36 credits in the following core courses:

Geog. 103, 205, 301, 404, 492

Econ. 235 or 324, 335

Biol. 271

A.L.R. 101

P.S. 211, 301

B. Complete 6 credits from each of the following five (5) groups (30 credits):

1. Geog. 202, 302, 311, 327

2. Hist. 341, 440, 450

3. Soc. 201, 307, 309

4. Geos. 101, 112, 304, 408

5. A.L.R. 380, 460

C. Approved electives to complete 130 credits

## Geological Engineering

### School of Mineral Engineering Department of Mining and Geological Engineering

Degrees: B.S., M.S.

Minimum Requirements for Degree: B.S. — 131 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 their 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.

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.

## Requirements

### Geological Engineering — B.S. Degree

1. Complete the general university requirements.
2. Complete the following degree and program (major) requirements:

First Year	
<i>Fall Semester</i>	17 Credits
G.E. 101 — Introduction to Geological Engineering.....	1
Engl. 111 — Methods of Written Communications.....	3
Math. 200 — Calculus.....	4
Chem. 105 — General Chemistry.....	4
E.S. 101 — Descriptive Geometry for Engineers.....	2
Social Science or Humanities**.....	3

<i>Spring Semester</i>	17 Credits
Sp.C. Elective.....	3
Math. 201 — Calculus.....	4
GE/Geos. 261 — General Geology for Engineers.....	3
Chem. 106 — General Chemistry.....	4
Social Science or Humanities**.....	3

### Second Year

Fall Semester	
Math. 202 — Calculus.....	4
Geos. 213 — Mineralogy.....	4
Phys. 211 — General Physics.....	4
Engl. 211 or 213 — Intermediate Exposition.....	3
Min. 202 — Mine Surveying.....	3

<i>Spring Semester</i>	17 Credits
E.S. 201 — Computer Techniques.....	3
Phys. 212 — General Physics.....	4
E.S. 208 — Mechanics.....	4
Geos. 214 — Petrology.....	3
Math. 302 — Differential Equations.....	3

### Third Year

Fall Semester	
E.S. 331 — Mechanics of Materials.....	3
E.S. 341 — Fluid Mechanics.....	4
G.E. 365 — Geological Engineering I.....	3
G.E. 375 — Terrain Analysis.....	3
Geos. 321 — Sedimentology.....	3

<i>Spring Semester</i>	16 Credits
Geos. 314 — Structural Geology.....	4
G.E. 372 — Rock Engineering.....	3
Min. 370 — Rock Mechanics* or Technical Elective.....	3
Stat. 301 — Elementary Probability & Statistics.....	3
Social Science or Humanities Elective**.....	3

Summer	
Geos. 351 — Field Geology.....	6

### Fourth Year

Fall Semester	
C.E. 326 — Introduction to Geotechnical Engineering* or Technical Elective.....	3
G.E. 471 — Remote Sensing for Engineering.....	3
Social Sciences or Humanities Elective**.....	7
Technical Elective***.....	2

<i>Spring Semester</i>	15 Credits
G.E. 405 — Exploration Geophysics.....	4
G.E. 420 — Subsurface Hydrology.....	3
Min. 408 — Mineral Valuation and Economics.....	2
G.E. 480 — Geological Engineering II.....	2
Technical Elective***.....	3

\* Either Min. 370 or C.E. 326 is required. Selection is dependent upon the student's interest and professional orientation.

\*\* Of the 16 social science/humanities credits, at least 6 must be at/or above the 200 level or advanced courses in a 100 level sequence. Sufficient depth in at least one of the areas must be demonstrated by evidence of a sequence of courses. This sequence must be approved by the students' departmental advisor.

\*\*\* Technical electives are dependent upon professional interest and selected by the student in conference with his or her advisor and approved by the department.

### Geological Engineering — M.S. Degree — Thesis Option

#### Thesis Option:

1. Complete the general university requirements and graduate degree requirements.

<i>Fall Semester</i>	15 Credits
Min. 621 — Advanced Mineral Economics.....	3
Min. 631 — Research Methods.....	3
G.E. 666 — Advanced Engineering Geology or G.E. 675 — Applied Mining Geology.....	3
Approved Technical Electives.....	3
G.E. 471 — Remote Sensing for Engineers.....	3

<i>Spring Semester</i>	15 Credits
Approved Technical Electives (minimum).....	3
Thesis (maximum).....	12
<b>Total Minimum</b>	<b>30</b>

Electives will consist of an approved course of study which will prepare the student for either exploration engineering or geotechnical engineering.

All graduate students will be expected to acquire some teaching and/or research experience in addition to thesis work as part of their M.S. degree program.

At least 24 credits, including thesis and/or research, must be at the 600 level.

### Geological Engineering — M.S. Degree — Non-Thesis Option

1. Complete the general university requirements and graduate degree requirements.

Min. 621 — Advanced Mineral Economics.....	3
Min. 631 — Research Methods.....	3
G.E. 666 — Advanced Engineering Geology or G.E. 675 — Applied Mining Geology.....	3
G.E. 471 — Remote Sensing for Engineers.....	3
Approved Technical Electives (minimum).....	18
Report/Research.....	3-6
<b>Total Minimum</b>	<b>33</b>

Electives will consist of an approved course of study which will prepare the student for either exploration engineering or geotechnical engineering.

At least 24 credits, including report and/or research, must be at the 600 level.

## Geology

### College of Natural Sciences

#### Department of Geology and Geophysics

Degrees: B.S., M.S., Ph.D.

**Minimum Requirements for Degrees:** B.S. — 130-136 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 studies. 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, isotope 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:

	Credits
Engl. 111 — Methods of Written Communication .....	3
Engl. 211 — Intermed. Expos. with Modes of Literature or Engl. 213 — Intermed. Exposition.....	3
Speech Communications Elective.....	3
Social Science (minimum of 3 credits) and Humanities (minimum of 3 credits), exclusive of 9 credit communications requirement.....	15
Mathematics.....	15 or 19
Geology options: Math. 200-201-Calculus, Stat. 301 Elem. Probabili- ty and Stat. and Stat. 401-Experimental Design and Regression or Stat. 402-Scientific Sampling; or Math. 200, 201, 202-Calculus, Math 302-Differential Equations .....	15
Geophysics Option: Math. 200, 201, 202-Calculus, Math. 302-Differ- ential Equations .....	15
Phys. 211-212 — General Physics (Phys. 103-104 may be taken for General Geology Option).....	8
Chem. 105-106 — General Chemistry .....	8
Biol. 103 — Biology and Man or other approved biology elective (rec- ommended, but not required for geophysics option).....	0-4
E.S. 201 — Computer Techniques or C.S. 201 — Computer Programming.....	3

3. For General Geology, Economic Geology and Petroleum Geology options, complete the following requirements:

Core Courses:	Credits
Geos. 101 — General Geology.....	3
Geos. 101L — General Geology Lab.....	1
Geos. 112 — Historical Geology .....	3
Geos. 112L — Historical Geology Lab.....	1
Geos. 213 — Mineralogy.....	4
Geos. 214 — Petrology.....	3
Geos. 314 — Structural Geology.....	3
Geos. 316 — Optical Mineralogy and Petrography.....	4
Geos. 321 — Sedimentology.....	3
Geos. 322 — Stratigraphic Principles.....	4
Geos. 350 — Geologic Field Methods.....	2
Geos. 351 — Field Geology.....	6
Geos. 401 — Invertebrate Paleontology.....	4
Geos. 408 — Photogeology.....	2
Geos. 417 — Intro. to Geochemistry.....	3

In addition, complete one of the three options below:

General Geology Option:	Credits
Geos. 304 — Geomorphology.....	3
Geos. 418 — Basic Geophysics.....	3
Electives (professional and general).....	22
Total	136

Economic Geology Option:	Credits
Geos. 304 — Geomorphology.....	3
Geos. 432 — Geology of Mineral Resources Lecture or Geos. 432L — Geology of Mineral Resources Laboratory.....	2 or 3
One of the following.....	2 or 3
Min. 202 — Mine Surveying (3 credits)	
M. Pr. 304 — Intro. to Metallurgy (3 credits)	
M. Pr. 313 — Intro. to Mineral Preparation (3 credits)	
Min. 407 — Mineral Industry and the Environment (2 credits)	
Min. 408 — Mineral Valuation and Economics (3 credits)	
G.E. 365 — Geological Engineering I (3 credits)	
One of the following.....	3 or 4
Geos. 418 — Basic Geophysics (3 credits)	
Geos. 410 — Potential Methods in Geophysics (2 credits)	
Geos. 412 — Electrical Methods in Geophysics (2 credits)	
Electives (professional and general).....	11-13
Total	136

Petroleum Geology Option:	Credits
Pet. E. 205 — Intro. to Petroleum Drilling and Production .....	3
Pet. E. 302 — Well Logging .....	3
Geos. 411 — Seismic Exploration.....	3
Geos. 410 — Potential Methods in Geophysics or Geos. 412 — Electrical Methods in Geophysics.....	2
Geos. 470 — Petroleum Geology .....	3
Electives (professional & general).....	15
Total	136

4. For the Geophysics Option, complete the following requirements:

	Credits
Geos. 101 — General Geology.....	3
Geos. 101L — General Geology Lab .....	1
Geos. 213 — Mineralogy.....	4
Geos. 418 — Basic Geophysics.....	3
Geos. 419 — Continuum Mechanics.....	4
Math. 211 — Linear Algebra and the Computer.....	1
Math. 421 — Applied Analysis I.....	4
Math. 422 — Applied Analysis II.....	4
Phys. 213 — Elements of Modern Physics .....	3
Phys. 311 — Mechanics I.....	4
Phys. 331 — Electricity and Magnetism .....	3
Phys. 332 — Electricity and Magnetism .....	3
Choose a minimum of 6 credits from the following courses:	
Geos. 112 — Historical Geology.....	3
Geos. 112L — Historical Geology Lab .....	1
Geos. 214 — Petrology* .....	3
Geos. 304 — Geomorphology .....	4
Geos. 314 — Structural Geology* .....	4
Geos. 321 — Sedimentology .....	3
Geos. 322 — Stratigraphic Principles.....	4
*MK Strongly recommended for students interested in exploration geophysics.	
Choose a minimum of 6 credits from the following from the follow- ing courses:	
Geos. 417 — Geochemistry .....	3
Geos. 420 — Elements of Seismology .....	3
Geos. 430 — Statistics and Data Analysis.....	3
E.S. 341 — Fluid Mechanics .....	4

Complete either Plan A or Plan B

Plan A — Exploration Geophysics:

Complete the following requirements:

Geos. 410 — Potential Methods in Geophysics.....	2
Geos. 411 — Seismic Exploration.....	3
Geos. 412 — Electrical Methods in Geophysics.....	2
Geos. 451 — Field Geophysics.....	2
Complete at least 6 credits from the following or from courses listed as options above that were not used:	
Geos. 302 — Marine Geology.....	3
Geos. 351 — Field Geology .....	4
Geos. 414 — Glaciology .....	3
Geos. 422 — Remote Sensing.....	3
Geos. 470 — Petroleum Geology .....	4
G.E. 365 — Geological Engineering.....	3
G.E. 372 — Rock Engineering.....	3
Pet.E. 302 — Formation Well Logging .....	2
Phys. 312 — Mechanics II .....	4
E.E. 341 — Computer Organization .....	4

Plan B — General Geophysics

Complete at least one course from the following:

Geos. 410 — Potential Methods in Geophysics.....	2
Geos. 411 — Seismic Exploration.....	3
Geos. 412 — Electrical Methods in Geophysics.....	2
Complete at least 12 credits from the following or from courses listed as options above that were not used:	
Geos. 302 — Marine Geology.....	3
Geos. 414 — Glaciology .....	3
Geos. 422 — Remote Sensing.....	3
G.E. 420 — Subsurface Hydrology .....	3
Phys. 312 — Mechanics II .....	4
Phys. 313 — Thermodynamics.....	4
E.E. 341 — Computer Organization .....	4
M.E. 441 — Heat and Mass Transfer.....	3
M.Pr. 418 — Emission Spectroscopy, X-ray Spectroscopy, Atomic Absorption .....	3
Electives (professional or general) to bring total to 130	
Total	130

MINOR in Geology:

A minor in geology requires 12-16 credits of approved geosciences courses.

Geology — M.S. Degree\*

1. Complete the general university requirements and master's degree requirements.

2. Complete a minimum of 30 credits, including a maximum of 6 credits of thesis (Geos. 699) and 6 credits of individual research (Geos. 698). At least 24 credits (including thesis and research) must be at the 600 level, and at least 15 credits from coursework (exclusive of thesis and research) must be at the 600 level.

Options:

**A. General Geology Option:** Complete at least one 600-level course from each of these three general areas: 1) sedimentology-stratigraphy, paleontology, quaternary studies; 2) structural geology, tectonics, geophysics; 3) igneous-metamorphic petrology, geochemistry, mineral deposits.

**B. Economic Geology Option:** Complete 9 credits in applied geoscience with at least one course in mineral economics or engineering management.

**C. Petroleum Geology Option:** Complete at least one course each in advanced structural geology, advanced stratigraphy, advanced sedimentology, and a geophysics course approved by the graduate advisory committee. The plan of study must include a minimum of two of the following courses:

	<i>Credits</i>
Geos. 643 — Sandstone Depositional Environments .....	3
Geos. 644 — Advanced Stratigraphy .....	3
Geos. 645 — Advanced Carbonate Sedimentology .....	3
Geos. 646 — Seismic Stratigraphy.....	3
Geos. 647 — Advanced Sedimentology .....	3
Geos. 648 — Sedimentary Basin Analysis .....	3

#### **Geology — M.A.T. Degree**

Contact the head of the department for degree requirements.

#### **Geology — Ph.D. Degree**

1. Complete the general university requirements for graduate students and Ph.D. degree requirements.
2. Complete required program as arranged by conference with the graduate advisory committee.

## Geophysics

### *College of Natural Sciences*

#### *Department of Geology and Geophysics*

Degrees: M.S., Ph.D.

**Minimum Requirements for Degrees:** M.S. — 36 credits (beyond a bachelor's degree), Ph.D. (open)

### Requirements

#### **Geophysics — M. S. Degree\***

1. Complete the general university requirements and master's degree requirements.
2. Complete a minimum of 30 credits, including a maximum of 6 credits of thesis (Geos. 699) and 6 credits of individual research (Geos. 698). At least 24 credits (including thesis and research) must be at the 600 level, and at least 15 credits from coursework (exclusive of thesis and research) must be at the 600 level.

#### *Options:*

**A. Solid-Earth Geophysics Option:** In addition to geophysics courses, the graduate advisory committee will require a selection of advanced courses in both geology and physics, the actual courses depending on how far the student's degree work is biased towards one discipline or the other.

**B. Snow, Ice and Permafrost Geophysics Option:** The student's graduate advisory committee will require a selection of advanced courses in ice, snow and permafrost studies and either geology, applied science and engineering, physics, or meteorology/oceanography (climate), depending on how far the student's degree is biased toward one given discipline.

\*To be admitted, the student is expected to have a background at least to the level of that listed for the relevant B.S. option in Geology and Geophysics. However, deficiencies can be made up concurrently with the degree program. Acceptance for the snow, ice, and permafrost geophysics option is not limited to those with a geoscience background; students with strong physical science or engineering backgrounds are also encouraged to apply.

#### **Geophysics — Ph.D. Degree**

1. Complete the general university requirements for graduate students and Ph.D. degree requirements.
2. Complete required program as arranged by conference with the graduate advisory committee.

## Guidance and Counseling

### *Rural College*

#### *Department of Behavioral Sciences and Human Services*

**Degree:** M.Ed.

**Minimum Requirements for Degree:** M.Ed. 42 additional credits

### Requirements

#### **Guidance and Counseling — M.Ed.**

The M.Ed. program in Elementary and Secondary Guidance and Counseling attempts to meet the demands of trained professional Counselors for the multicultural setting in rural and urban Alaska. The purpose of this program is to train experienced public school teachers at the graduate level in cross-cultural school counseling with specific training in the areas of counseling and consultation for educational, social, and vocational decisions. The program includes: the acquisition of knowledge in counseling, appraisal and research. In addition, a supervised practicum is required.

**CERTIFICATION** - Graduates may qualify for counseling endorsement in various states only by planning their programs to meet specific requirements. Certificates are issued by the appropriate state department of education. In Alaska, certificates are granted by the Alaska Department of Education in Juneau. Students who obtain the M.Ed. degree will meet the current academic requirements for Alaska certification. Teachers holding a Master's Degree and three years teaching experience at the appropriate level may be eligible for certification in Guidance and Counseling by completing a core of specialization courses. Any teacher wishing to become certified through the University of Alaska Fairbanks must apply for admission, be accepted and complete 12 credit hours in residence in the program.

#### **Guidance and Counseling — M.Ed.:**

##### **Admission Requirements**

1. The equivalent of a University of Alaska Bachelor of Education degree or an Alaska teaching certificate with a minimum of 24 semester hours of education courses with an average g.p.a. of 3.00 (B). A copy of the valid teaching certificate must be included in the application.
2. Three years of satisfactory teaching experience in an accredited elementary or secondary level, verified by letter from the district office.
3. Three letters of recommendation: Professional practicing counselor, peer teacher, and a community individual.
4. Admission also may be contingent upon (1) satisfactory scores on various standardized tests and (2) a satisfactory personal interview conducted by counselor training faculty.

##### **Minimum Requirements:**

1. Complete a minimum of 42 credits in approved courses. This is a nonthesis program.
2. Pass a written qualifying examination in the foundation courses after completing 15 semester hours of an approved program.
3. Design and complete a counseling research project approved by the advisory committee with an oral comprehensive examination.
4. Complete the general graduate degree requirements.

Courses assigned by the student's graduate committee to remove deficiencies will not be allowed as part of the graduate program.

##### **Required Courses Elementary:**

Ed. 611 — Learning, Thinking and Perception in Cultural Perspective .....	3
Ed. 630 — Curriculum Theory .....	3
Ed. 690 — Seminar in Cross-Cultural Studies .....	3
Coun. 615 — Foundations of Guidance and Counseling .....	3
Coun. 624 — Group Counseling .....	3
Coun. 628 — Life Span Development .....	3
Coun. 634 — Practicum I .....	3
Coun. 645 — Behavioral Consultation .....	3
Coun. 660 — Cross-Cultural Counseling .....	3
Coun. 698 — Research Project .....	3
SWK 306 — Social Welfare: Policies and Issues .....	3
Approved electives .....	9
(Recommended: ANS 475; Ed. 380, 601, 603; Soc. 304, 405, 408; Sp.C. 330)	

##### **Required Courses Secondary**

Ed. 611 — Learning, Thinking and Perception in Cultural Perspective .....	3
Ed. 690 — Seminar in Cross-Cultural Studies .....	3



Coun. 615 — Foundations of Guidance and Counseling.....	3
Coun. 623 — Principles and Techniques of Individual Counseling....	3
Coun. 624 — Group Counseling.....	3
Coun. 628 — Life Span Development.....	3
Coun. 634 — Practicum I.....	3
Coun. 636 — Practicum II.....	3
Coun. 660 — Cross-Cultural Counseling.....	3
Coun. 698 — Research Project.....	3
SWK 306 — Social Welfare: Policies and Issues.....	3
Approved electives.....	9
(Recommended: ANS 475; Ed. 380, 601, 603, 630; Soc. 304, 405, 408; Sp.C. 330)	

#### Guidance and Counseling - Certification Program:

##### Admission Requirements

1. A Master's Degree and current Alaska Teaching Certificate with a minimum of 24 hours of education courses with an average g.p.a. of 3.00 (B).
2. Transcripts and copy of teaching certificate.
3. Letter of verification of teaching experience from school district.
4. Three letters of recommendation: practicing counselor, peer teacher, community individual.

##### Minimum Requirements Elementary Endorsement (Certification)

1. Complete a minimum of 21 credits in approved courses.
2. Pass a qualifying examination in the foundation courses after completing 15 credits hours of an approved program.  
Prerequisite courses to this program must appear in the Master Degree program. Graduate level courses in Educational Psychology or Learning Theory and Curriculum Theory foundation courses are included in the qualifying examination. Where the courses do not appear in the transcripts, these are deficits to be included in the certification program.

##### Required Courses

*Coun. 615 — Foundations of Guidance and Counseling.....	3
*Coun. 624 — Group Counseling.....	3
*Coun. 628 — Life Span Development.....	3
Coun. 634 — Practicum I.....	3
*Coun. 645 — Behavioral Consultation.....	3
Coun. 660 — Cross-Cultural Counseling.....	3
SWK 306 — Social Welfare: Policies and Issues.....	3

\*Foundation courses for the qualifying examination after 15 semester hours in an approved program.

##### Minimum Requirements Secondary Endorsement (Certification)

1. Complete a minimum of 25 credits in approved courses.
2. Pass a qualifying examination in the foundation courses after completing 15 credit hours of an approved program.  
Prerequisite courses to this program must appear in the Master Degree program. Graduate level courses in Educational Psychology or Learning Theory are foundation courses and are included in the qualifying examination. Where these courses do not appear in the transcripts, these deficits are to be included in the certification program.

##### Required Courses

*Coun. 615 — Foundations of Guidance and Counseling.....	3
*Coun. 623 — Principles and Techniques of Individual Counseling..	4
*Coun. 624 — Group Counseling.....	3
*Coun. 628 — Life Span Development.....	3
Coun. 634 — Counseling Practicum I.....	3
Coun. 636 — Counseling Practicum II.....	3
Coun. 660 — Cross-Cultural Counseling.....	3
SWK 306 — Social Welfare: Policies and Issues.....	3

\*Foundation courses for the qualifying examination after 15 semester hours in an approved program.

#### Health Sciences, See Other Academic Opportunities

## History

### College of Liberal Arts Department of History

Degrees: B.A., M.A.T.

Minimum Requirements for Degrees: B.A. — 130 credits; M.A.T. — 36 additional 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 as 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. 101-102 — Western Civilization.....	6
Hist. 121-122 — East Asian Civilization.....	6
Hist. 131-132 — History of the U.S.....	6

Complete 21 upper-division credits in history, including:

Hist. 475-476 — Historiography and Intro. to Historical Method.....	6
3. Minimum credits required.....	130

### History — M.A.T. Degree

Refer to general requirements for the M.A.T. degree. Persons interested in this degree program should contact the head of the department.

### 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.

## Humanities

### College of Liberal Arts Department of Philosophy and Humanities

Degree: B.A.

Minimum Requirements for Degree: 130 credits

One main objective of the humanities program is to enable the student to go beyond specialization and achieve integration of knowledge. Others are to deepen an appreciation of all the arts, to develop critical thinking, and to heighten an awareness of self and role in society.

The humanities program is set up in such a way as to offer a solid second major for many bachelor of arts and bachelor of science degree candidates. It aims at students from virtually all fields of specialization.

## Requirements

### Humanities — B.A. Degree

1. Complete the general university requirements and B.A. degree requirements.
2. Complete two years at the college level in a non-English language.
3. Complete the following program (major) requirements:

Prerequisites:	Credits
Hist. 101-102 — Western Civilization.....	6
Ling. 101 — The Nature of Language or Ling. 216 — Languages of the World.....	3
Phil. 201 — Introduction of Philosophy or Phil 202 — Introduction to Eastern Philosophy.....	3

Complete the following core courses:

Hum. 201 — Unity in the Arts.....	3
Hum. 202 — Unity in the Sciences.....	3
Hum. 329 — The Modern Media.....	3
Hum. 332 — Varieties of Visual Expression.....	3
Hum. 342 — Synthesis in Musical Expression.....	3
Hum. 411 — Dimensions of Literature.....	3
Phil. 481 — Philosophy of Science.....	3
Hum. 492 — Senior Seminar.....	3

Electives:

21 credits

Courses chosen from the three major areas: arts, natural sciences, social sciences; three courses to be taken in one of these areas, and two in each of the remaining ones, totaling 21 credits. A list of recommended courses, drawn up and periodically updated by the Humanities Standing Committee after consultation with all departments in all colleges that wish to cooperate, will assist the student in making the choice of electives.

## 4. Minimum credits required..... 130

**MINOR in Humanities:**

Prerequisites:	Credits
Hist. 101-102 — Western Civilization.....	6
Core Courses:	
Hum. 201 — Unity in the Arts.....	3
Hum. 202 — Unity in the Sciences.....	3
Upper-division Humanities electives.....	12

**Human Services****Rural College****Department of Behavioral Sciences and Human Services**

Degree: B.A.\*

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 and 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.

\* At the present time, no students are being accepted into the Human Services program.

**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
HMSV 201 — Introduction to Human Services.....	3
Psy./Soc. 250 — Introductory Statistics for Behavioral Sciences.....	3
Soc. 301 — Rural Sociology.....	3
Psy./Soc. 473 — Social Science Research Methods.....	3
Psy. 210 — Cross-Cultural Psychology.....	3
Psy. 345 — Abnormal Psychology	
or Soc. 335 — Sociology of Deviant Behavior.....	3
Soc. 408 — American Minority Groups.....	3
Psy. 101 — Introduction to Psychology.....	3
Departmental core.....	15
(These courses also may be applied to fill general distribution requirements.)	
Soc. 101 — Introduction to Sociology.....	3
Psy. 240 — Developmental Psychology in Cross-Cultural Perspective.....	3
Psy. 304 — Personality.....	3
Psy. 380 — Human Behavior in the Arctic.....	3
Anth. 242 — Native Cultures of Alaska.....	3
Human Services.....	18
HMSV 210 — Crisis Intervention.....	3
HMSV 350 — Foundations of Counseling I.....	3
HMSV 351 — Foundations of Counseling II.....	3
HMSV 230 — Alcoholism: Theories of Etiology.....	3
HMSV 330 — Alcoholism: Treatment and Prevention.....	3
HMSV 360 — The Helping Role in Child Abuse and Neglect.....	3
HMSV 410 — Management of Human Services Programs.....	3
HMSV 415 — Group Counseling.....	3
HMSV 488 — Practicum in Human Services.....	6
*HMSV/Psy. 445 — Community Psychology.....	3
*Psy./Soc. 370 — Drugs and Drug Dependence.....	3
*Soc. 310 — Sociology of Later Life.....	3
*Soc. 242 — The Family: A Cross-Cultural Perspective.....	3
R.D. 325 — Community Organization and Development Strategies.....	3
Minimum Credits Required for Degree.....	121

\*These courses, when not applied towards the major, may be applied to fill distribution requirements.

**MINOR in Human Services:**

A minor in human services requires the satisfactory completion of 15 credits of approved human services courses including HMSV 201 and 210.

**Interdisciplinary Studies**

Degrees: B.A., B.S., M.A., M.S., Ph.D.

Minimum Requirements for Degrees: B.A. — 130 credits; B.S. — 130 credits; M.A. and M.S. — 30 or more credits; Ph.D. — open

**Undergraduate —**

The exceptional student with well-defined goals which do not fit into the established bachelor's program of the university should have an opportunity to achieve baccalaureate recognition for carrying out an approved interdisciplinary program which approximates the requirements for a baccalaureate degree in an established discipline. For this purpose the bachelor of arts or bachelor of science degree in interdisciplinary studies is offered.

Upon completion of 15 credits at UAF and at least 60 credits prior to graduation, a student may submit to the vice chancellor for Academic Affairs, an interdisciplinary curriculum leading to a B.A. or B.S. degree in interdisciplinary studies. The proposed curriculum must differ significantly from established degree programs at UAF and will require evidence that the necessary facilities and faculty are available to ensure an approximation of a normal bachelor's degree. All general requirements for the B.A. or B.S. degree must be met.

The vice chancellor will appoint to review the proposal a committee of at least three faculty members familiar with the interdisciplinary subject. If the curriculum is approved by the vice chancellor, he/she will, in consultation with the student, appoint an advisory committee of at least three faculty members to assist the student in planning and carrying out his program. The degree title will be chosen by the advisory committee in concert with the student and with the approval of the vice chancellor. Changes within the approved curriculum would be made only with the approval of this advisory committee.

**Graduate —**

Interdisciplinary proposals for graduate degrees must be submitted to the Director of Graduate Programs who will coordinate the review process similar to that described above for undergraduate proposals.

**Journalism and Broadcasting****College of Liberal Arts****Department of Journalism and Broadcasting**

Degree: B.A.

Minimum Requirements for Degree: 130 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 and on Alaska Today magazine. 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 and its two sequences, News-Editorial and Broadcast, are 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:

	<b>16 Credits</b>
J-B 101 — Introduction to Mass Communications or J-B 102 — Broadcasting and Society .....	3
J-B 301 — Basic Newsgathering and Processing .....	4
J-B 320 — Journalism in Perspective .....	3
J-B 400 — Media Practicum .....	3
J-B 413 — Mass Media Law and Regulations .....	3

**B. Complete one of the following sequences:****News-Editorial** **18 Credits**

J-B 444 — Advanced Newsgathering and Processing.....4

## One of the following:

J-B 204 — Basic Photojournalism .....

J-B 215 — Audio Production.....3

J-B 316 — Television Production .....

Four of the following:

J-B 204 — Basic Photojournalism .....

J-B 240 — International Communications.....3

J-B 303 — Intermediate Photography.....3

J-B 311 — Magazine Article Writing.....3

J-B 323 — Magazine Editing.....3

J-B 324 — Typography and Publication Design .....

J-B 340 — Approaches to the Study of Mass Communication .....

\*J-B 326 — Principles of Advertising.....3

J-B 402 — Advanced Photography .....

J-B 411 — Advanced Writing for Publication .....

J-B 424 — Magazine Production.....3

J-B 433 — Public Relations .....

J-B 492 — Seminar .....

\*\*Broadcast **18 Credits**

J-B 215 — Audio Production.....3

J-B 316 — Television Production .....

Four of the following:

J-B 204 — Basic Photojournalism .....

J-B 240 — International Communications.....3

J-B 317 — Broadcast Journalism.....3

\*J-B 326 — Principles of Advertising.....3

J-B 340 — Approaches to the Study of Mass Communication .....

J-B 372 — Instructional Television .....

J-B 407 — Programming and Production.....3

J-B 415 — News/Documentary Television Production.....3

J-B 416 — Advanced Broadcast Production .....

J-B 433 — Public Relations .....

J-B 492 — Seminar .....

C. Complete at least 3 credits in each of the following areas:

Economics                      Sociology

Political Science              History

Psychology

D. Although not required, it is strongly recommended that every journalism student study another language, both to help gain a better perspective of English and to better comprehend the changing world.

E. To assure the journalist of a broad liberal arts education, no more than 33 hours in journalism and broadcasting courses may be included in the 130 hours required for the B.A. degree.

3. Minimum credits required..... 130

\*Cross-listed with B.A. 326, Principles of Advertising.

\*\*Note: It should be understood that this broadcast option is primarily a news and production curriculum and is not intended as a dramatic or performing arts option.

**MINOR in Journalism and Broadcasting:**

Complete at least 16 credits of approved journalism and/or broadcasting courses, including the following:

J-B 101 — Introduction to Mass Communications

or J-B 102 — Broadcasting and Society .....

J-B 301 — Basic Newsgathering and Processing .....

## Justice

**College of Liberal Arts**

**Department of Political Science**

Degree: B.A.

Minimum Requirements for Degree: B.A. — 130 credits

It has been said that the quality of a nation's civilization can be largely measured by the methods it uses to enforce its criminal law.

We in the United States deal with our criminals through a complex maze of organizations commonly referred to as the criminal justice

system. This system is composed of police, courts, corrections and a multitude of supportive professions which are more or less actively engaged in dealing with criminals within the guidelines of our federal and state constitutions.

Only through an active educational effort by criminal justice personnel and students planning to enter the profession can we hope to attain the high degree of professionalization 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:

	<b>Credits</b>
Justice Core Course Requirements .....	21
Just. 110 — Introduction to Justice.....	3
Just. 221 — Justice Organization and Management .....	3
Just. 250 — Development of Law .....	3
Just. 251 — Criminology.....	3
Just. 330 — Justice and Society.....	3
Just. 451 — Research, Planning and Policy Analysis .....	3
Just. 460 — Justice Processes.....	3

**Justice Emphasis Area Requirements:**

15 credits in justice courses of which at least 12 credits must be upper division. Possible special emphasis areas might include:

Justice Administration	Security Administration
Corrections	General Justice
Legal Studies	

3. Minimum credits required..... 130

**MINOR in Justice:**

1. Complete 18 credits in justice, including Just. 110, 9 of which must be upper division.

## Linguistics

**College of Liberal Arts**

**Department of Linguistics**

Degree: B.A.

Minimum Requirements for Degree: B.A. — 130 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:

	<b>Credits</b>
I. Background-related Requirements.....	15-18
Four semesters (or equivalent) of one foreign or Native language and two semesters of a second.	
(It is recommended that at least one of the languages be other than an Indo-European language.).....	12-16
Ling. 101 — Nature of Language or Ling. 216 — Languages of the World.....	3

II. Major requirements .....

Complete the following Linguistics courses:

Ling. 318 — Intro. to Phonetics and Phonology .....

Ling. 320 — Intro. to Syntactic Theory .....

Ling. 350 — Historical Linguistics .....

Complete 7 of the following:

Ling. 410 — Second Language Teaching .....

Ling. 482 — Topics in Linguistics .....

(can be taken twice)

Ling. 216 — Languages of the World.....

Ling./Ed. 303 — Language and Literacy Development .....

Ling. 450 — Language Policy and Planning .....

ANL 215 — Alaska Native Languages .....

ANL 216 — Alaska Native Languages .....	3
NS 320 — Language and Cultures .....	3
Engl. 318 — Modern English Grammar .....	3
Engl. 462 — Applied English Linguistics .....	3
Engl. 472 — History of the English Language .....	3
Sp.C. 320 — Communication and Language .....	3

Where appropriate, courses listed under 1 may be counted toward fulfillment of B.A. requirements listed under 2.

4. Minimum credits required..... 130

#### MINOR in Linguistics:

A minor in linguistics requires 12 credits in linguistics.

## Marine Biology

### School of Fisheries and Ocean Sciences

#### Graduate Program in Marine Sciences and Limnology

Degrees: M.S.

Minimum Requirements for Degree: 30 credits (beyond a bachelor's degree)

A graduate curriculum in marine biology is offered by the Graduate Program in Marine Sciences and Limnology. Marine biology and biological oceanography have different foci. Marine biology focuses on the 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 a number of coastal field sites. Opportunities for field work are available on the R/V *Alpha Helix*, which operates along the Alaskan Coast and in the Bering Sea, on the R/V *Little Dipper*, which operates in Resurrection Bay, and on the R/V *Gaybeso*, which operates in Southeast Alaska.

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 fellowship support is available. Most students are supported on research projects that relate directly to their degree research.

## Requirements

### Marine Biology — M.S. Degree

1. Complete the general university requirements and master's degree requirements.
2. Complete a minimum of 30 credits including MSL 610, MSL 611, MSL 650, three credits of MSL 692 and any one of MSL 620, 630, 650, 660 or Biol. 652. At least 24 credits, including thesis and/or research, must be at the 600 level.

(See also "Oceanography".)

## Mathematics

### College of Liberal Arts

#### Department of Mathematics

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. A variety of programs are offered by the Department of Mathematical Sciences for students majoring in mathematics. 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.

## Requirements

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 adviser 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.

2. Complete the following program (major) requirements:

Complete the following courses:	
Math. 200, 201, 202 — Calculus sequence .....	12
Math. 210 — Calculus and the Computer .....	1
Math. 211 — Linear Algebra and the Computer .....	1
Math. 314 — Linear Algebra .....	3
Math. 308 — Abstract Algebra .....	3
Math. 401 — Advanced Calculus .....	3
Math. 492 — Senior Seminar .....	2
<b>TOTAL</b>	<b>25</b>

Complete an elective package in the Mathematical Sciences consisting of at least 18 credits. This package must be approved by a Mathematical Sciences adviser 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..... 120

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 Mathematical Structures .....	3
Math. 402 — Advanced Calculus .....	3
Math. 404 — Topology .....	3
Approved Math elective .....	6
<b>TOTAL</b>	<b>18</b>

#### B. Applied Math

Math. 302 — Differential Equations .....	3
Math. 421 — Applied Analysis I .....	4
Math. 422 — Applied Analysis II .....	4
Math. 460 — Mathematical Modeling .....	3
Two courses chosen from Math 307, 402, 310 and Stat. 301 .....	6
<b>TOTAL</b>	<b>20</b>

#### C. Secondary Education

Stat. 301 — Elementary Probability and Statistics or Stat. 400 — Statistics .....	3
Math. 305 — Geometry .....	3
C.S. 201 — Computer Programming I .....	3
Math. 306 — History and Philosophy of Mathematics .....	3
Approved Math elective .....	6
<b>TOTAL</b>	<b>18</b>

#### D. Statistics Emphasis

Math. 371 — Probability .....	3
Math. 408 — Mathematical Statistics .....	3
Math. 460 — Mathematical Modeling .....	3
Stat. 301 — Elementary Probability and Statistics or Stat. 400 — Statistics .....	3
Stat. 401 — Experimental Design & Regression .....	3
Approved elective .....	3
<b>TOTAL</b>	<b>18</b>

### MINOR in Mathematics:

A minor in Mathematics requires completion of Math 200-201-202, 210, 211 in addition to six departmentally approved credits at the-300 level or above.

### Mathematics — M.A.T. Degree

1. Complete the general university requirements and master's degree requirements.
2. Complete 36 credits in courses approved by the student's graduate committee. At least 24 credits, including thesis and/or research, must be at the 600 level.

### Mathematics — M.S. Degree

1. Complete the general university requirements and Master's degree requirements.
2. Complete a curriculum of 30-35 credits of mathematics courses consisting of a core, electives and project/thesis. At least 24 credits, including thesis and/or research must be at the 600 level.
3. Upon completion of core course work, the candidate must pass an examination based on the core material.

#### Mathematics — Ph.D. Degree

1. Complete the general university requirements and Ph.D. requirements.
2. Complete the required program as arranged by conference with the candidate's graduate advisory committee.

## Mechanical Engineering

### School of Engineering

#### Department of Mechanical Engineering

Degrees: 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. Senior year courses focus on mechanical engineering 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 engineering 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. At least 6 of the 16 social science and humanities elective credit must be: (a) above the 100 level; or (b) advanced courses in a 100 level sequence. Sufficient depth in at least one of the areas must be demonstrated by evidence of a sequence of courses. This sequence must be approved by the student's departmental advisor.

#### First Year

<i>Fall Semester</i>	16 credits
Engl. 111 — Methods of Written Comm .....	3
Math. 200 — Calculus .....	4
E.S. 101 — Descriptive Geometry for Engineers .....	2
Chemistry Elective .....	4
Humanities/Social Science Elective .....	3

#### Spring Semester

	17 credits
Speech Comm. Elective .....	3
Math. 201 — Calculus .....	4
E.S. 201 — Computer Techniques .....	3
Chemistry Elective .....	4

Humanities/Social Science Elective .....

#### Second Year

<i>Fall Semester</i>	17 credits
Phys. 211 — General Physics .....	4
Math. 202 — Calculus .....	4
E.S. 209 — Statics .....	3
M.E. 321 — Industrial Processes .....	3
Engl. 213 — Intermediate Exposition .....	3

#### Spring Semester

	16 credits
Phys. 212 — General Physics .....	4
Math 302 — Differen. Equations .....	3
E.S. 210 — Dynamics .....	3
E.S. 346 — Thermodynamics .....	3
Humanities/Social Science Elec. ....	3

#### Third Year

<i>Fall Semester</i>	16 credits
E.S. 301 — Engineering Analysis .....	3
E.S. 307 — Elements of Electrical Engr. ....	3
E.S. 331 — Mechanics of Materials .....	3
E.S. 341 — Fluid Mechanics .....	4
Humanities/Social Science Elective .....	3

#### Spring Semester

	16 credits
M.E. 302 — Mechanical Design I .....	4
M.E. 313 — Mech. Engr. Thermodyn. ....	3
M.E. 441 — Heat and Mass Transfer .....	3
E.S. 308 — Instrumentation and Measurement .....	3
Humanities/Social Science Elec. ....	3

#### Fourth Year

<i>Fall Semester</i>	16 credits
M.E. 403 — Mechanical Design II .....	4
M.E. 415 — Thermal Systems Lab .....	2
M.E. Elective** .....	3
E.S. 334 — Elements Material Science Engr .....	3
Technical Elective* .....	3
Humanities/Social Science Elective .....	1

#### Spring Semester

	16 credits
M.E. 487 — Design Project .....	3
M.E. 408 — Dynamics of Systems .....	3
M.E. Elective** .....	3
ESM 450 — Econ. Analysis and Operations .....	3
Approved Elective .....	4

\*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 M.E. advisor.

### Mechanical Engineering — M.S. Degree

1. Complete general university requirements and master's degree requirements.

2. Complete the following program (major) requirements:

Mathematics Core .....

Select at least two of the following:

Math. 421 — Applied Analysis I (4 credits)	
Math. 422 — Applied Analysis II (4 credits)	
Math. 423 — Applied Mathematics (3 credits)	
Math. 310 — Numerical Analysis(3 credits)	
Any 600 level mathematics course (3 credits)	

Mechanical Engineering Core .....

Select at least four of the following:

M.E. 601 — Finite Element Analysis (3 credits)	
M.E. 604 — Experimental Mechanics (3 credits)	
M.E. 617 — Power Analysis(3 credits)	
M.E. 631 — Advanced Mechanics of Materials (3 credits)	
M.E. 634 — Advanced Materials Engineering (3 credits)	
M.E. 641 — Advanced Fluid Mechanics (3 credits)	
M.E. 642 — Advanced Heat Transfer (3 credits)	
M.E. 685 — Arctic Heat and Mass Trans .....	3

NOTE: All students must take at least one course in the mechanical systems sequence (M.E. 601, 631, 634) and one from the fluids/therma science sequence (M.E. 641, 642).

Approved Electives .....

(Any M.E. or other engineering/science/mathematics graduate courses approved by the student's graduate advisory committee.)

M.E. 699 — Thesis .....

Total 30

Candidates for the M.S. in Mechanical Engineering must pass the EIT Engineering-in-Training Examination or the Graduate Record Examination in Engineering.

**Medical Technology**, See Other Academic Opportunities

## Military Science

*College of Liberal Arts  
Department of Military Science*

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

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. Those students selected who desire to compete for a commission are provided a \$100-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 texts 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 1 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 \$100 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*

Degree: M.S.

Minimum Requirements for Degree: 30-33 credits beyond Bachelor's degree.

### Requirements

**Mineral Preparation Engineering — M.S. Degree — Thesis Option**

1. Complete the general university requirements and master's degree requirements.
2. Complete the following degree and program requirements:

Fall Semester	15 Credits
M.Pr. 601 — Froth Flotation .....	3
M.Pr. 433 — Coal Preparation .....	3
Min. 621 — Advanced Mineral Economics .....	3
G.E. 431 — Applied Ore Microscopy .....	2
M.Pr. 699 — Thesis .....	4

Spring Semester	15 Credits
M.Pr. 684 — Mineral Preparation Research .....	3
M.Pr. 606 — Plant Design .....	3
M.Pr. 699 — Thesis .....	3
*Electives .....	6
<b>Total</b>	<b>30</b>

**Mineral Preparation Engineering — M.S. Degree — Non-Thesis Option**

1. Complete the general university requirements and graduate degree requirements.
2. Complete the following degree and program requirements:

MPR 601 — Froth Flotation .....	3
MPR 433 — Coal Preparation .....	3
Min. 621 — Advanced Mineral Economics .....	3
G.E. 431 — Applied Ore Microscopy .....	2
MPR 698 — Report/Research .....	3-6
Min./MPR 688 — Seminar .....	1
MPR 684 — Mineral Preparation Research .....	3
MPR 606 — Plant Design .....	3
*Electives (minimum) .....	12
<b>Total Minimum</b>	<b>33</b>

\*Electives will be in the field of chemistry, physics, and mathematics and will be chosen to broaden the candidate's fundamental knowledge, depending upon his/her specific background and interest. Electives must be at 600 level.

## Mining Engineering

*School of Mineral Engineering  
Department of Mining and Geological Engineering*

Degrees: B.S., M.S., E.M.

Minimum Requirements for Degrees: B.S. — 133 credits; M.S. — 30-36 additional credits; E.M. — thesis and 5 years of experience

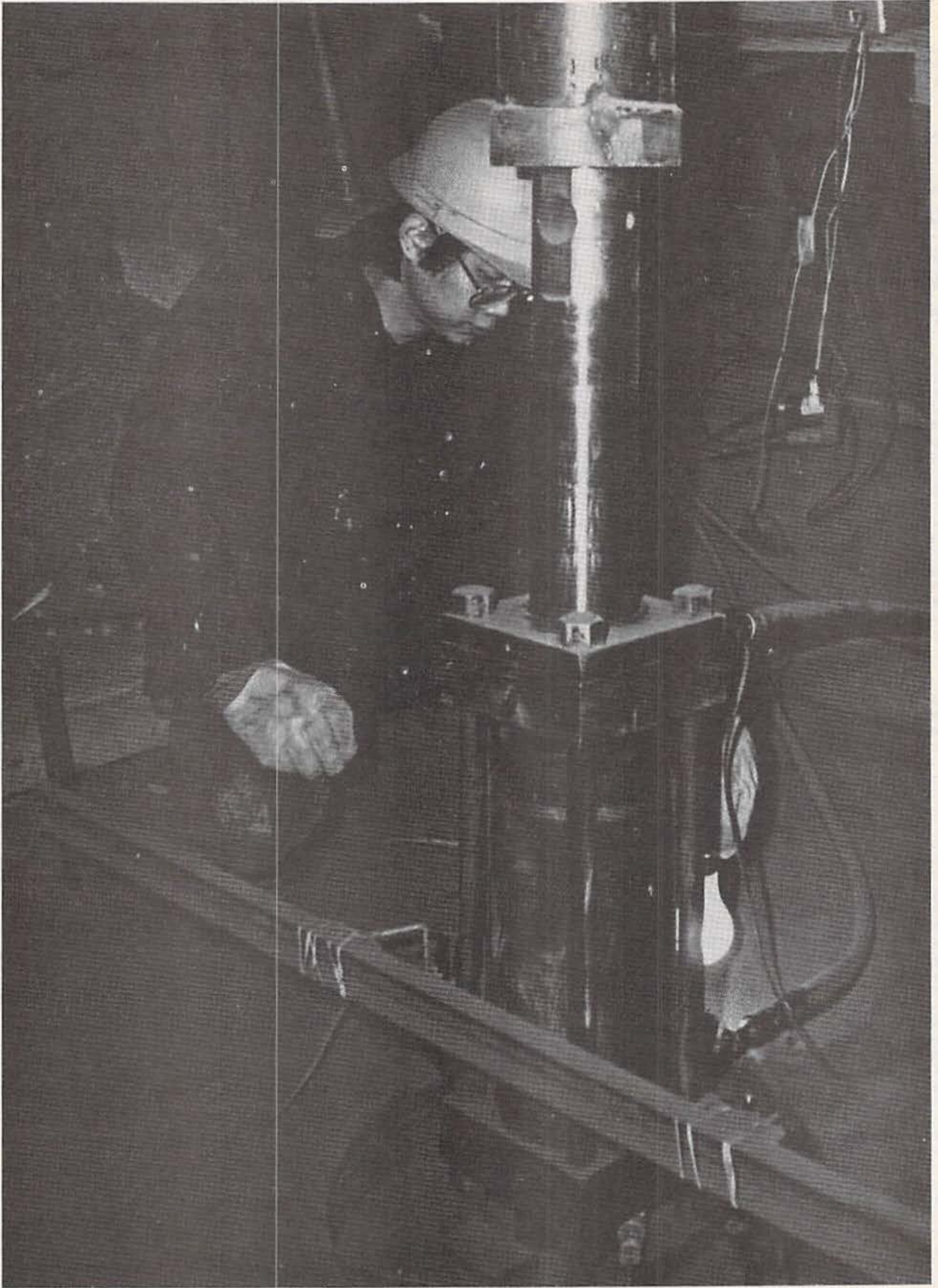
In the mining engineering curriculum, particular emphasis is placed upon engineering as it applies to the exploration and development of mineral resources and upon the economics of the business of mining. The program allows the student the choice of technical electives to develop in areas of exploration, 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 Engineering-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.

The graduate program allows for the awarding of master of science degree in mining engineering. The curricula consist of required and elective course work as outlined below. University policy pertaining to graduate study leading to a master's degree apply as approved by the student's adviser and the Mining Engineering faculty.

\***Professional Degrees** — The graduate program also provides for the awarding of a professional degree, Engineer of Mines (E.M.). This



Kyin-Kyok Hubert Law, a graduate student in geological engineering, checks a hydraulic cylinder used in an experiment to determine the load bearing capabilities of permafrost. This experiment was conducted in the permafrost tunnel located north of Fairbanks in Fox.

degree may be conferred upon engineering graduates who present satisfactory evidence of continuous engagement in responsible engineering work for not less than five years and a satisfactory thesis.

## Requirements

### Mining Engineering — B.S. Degree

1. Complete the general university requirements.
2. Complete the following degree and program (major) requirements:

First Year	17 Credits
<i>Fall Semester</i>	
Engl. 111 — Methods of Written Communications.....	3
Math. 200 — Calculus.....	4
Chem. 105 — General Chemistry.....	4
Min. 103 — Introduction to Mining Engineering.....	2
Min. 104 — Mining Safety and Operations Lab.....	1
Social Sciences or Humanities Elective <sup>1</sup> Æ <sup>2</sup> .....	3

Spring Semester	16 Credits
Chem. 106 — General Chemistry.....	4
Sp.C. Elective.....	3
Math. 201 — Calculus.....	4
E.S. 101 — Descriptive Geometry for Engineering.....	2
Geos. 261 — General Geology for Engineers.....	3

Second Year	17 Credits
<i>Fall Semester</i>	
Math. 202 — Calculus.....	4
G.E./Geos. 262 — Mineralogy and Petrology for Engr. ....	3
Phys. 211 — General Physics.....	4
Min. 202 — Mine Surveying.....	3
M.Pr. 313 — Introduction to Mineral Preparation.....	3

Spring Semester	17 Credits
Phys. 212 — General Physics.....	4
E.S. 208 — Mechanics.....	4
E.S. 201 — Computer Techniques.....	3
Engl. 211 or 213 — Intermediate Exposition.....	3
Math. 302 — Differential Equations.....	3

Third Year	15 Credits
<i>Fall Semester</i>	
E.S. 331 — Mechanics of Materials.....	3
E.S. 341 — Fluid Mechanics.....	4
Stat. 400 — Statistics.....	3
E.S. 307 — Elements of Electrical Engineering.....	3
Geos. 432L — Geology of Mineral Resources Laboratory.....	2

Spring Semester	16 Credits
E.S. 346 — Basic Thermodynamics.....	3
Min. 370 — Rock Mechanics.....	3
Min. 301 — Mine Plant Design.....	3
Min. 302 — Underground Mine Environmental Engineering.....	3
Social Sciences or Humanities <sup>1</sup> Æ <sup>2</sup> .....	4

Fourth Year	18 Credits
<i>Fall Semester</i>	
Min. 443 — Rock Fragmentation.....	3
Min. 445 — Design of Surface Mines for Conv. & Arctic Cond.....	3
Min. 446 — Underground Mining Meth. & Their Design.....	3
Min. 447 — Mining Methods for Placer and Offshore Deposits.....	3
Social Sciences or Humanities <sup>1</sup> Æ <sup>2</sup> .....	6

Spring Semester	17 Credits
Min. 408 — Mineral Valuation and Economics.....	3
Min. 409 — Operations Research & Computer Appl. in Min. Ind. ....	3
Min. 490 — Mine Design Project.....	2
Technical Electives <sup>3</sup> .....	6
Social Sciences or Humanities <sup>1</sup> Æ <sup>2</sup> .....	3

#### Notes:

<sup>1</sup> Of the 16 social science/humanities credits, at least 6 must be at or above the 200 level or advanced courses in a 100 level sequence. Sufficient depth in at least one of the areas must be demonstrated by evidence of a sequence of courses. This sequence must be approved by the student's departmental advisor.

<sup>2</sup> 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.

### Recommended Technical Electives for B.S. in Mining Engineering

1. Min. 472 — Design, Construction and Stability of Mining Openings.
  2. G.E. 405 — Exploration Geophysics
  3. G.E. 440 — Slope Stability
  4. M.Pr. 410 — Materials Handling Systems for Mineral Preparation
- 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.

### Mining Engineering — M.S. Degree — Thesis Option

1. Complete the general university requirements and graduate degree requirements.
2. Complete the following program (major) requirements:

Fall Semester	15 Credits
Min. 631 — Research Methods in Mineral Engineering.....	4
Min. 637 — Mine Systems Simulation or	
Min. 673 — Theoret. and Exper. Methods in Rock Mechanics.....	3
Min. 621 — Advanced Mineral Economics.....	3
Approved Technical Electives.....	3-6
Min. 688 — Graduate Seminar I.....	1
Total	30

Spring Semester	15 Credits
Min. 433 — Mining Access, Safety and Environmental Law.....	3
Min. 689 — Graduate Seminar II.....	1
Min. 699 — Thesis*.....	6
Approved Technical Electives.....	3-6
Total	30

\*6 credit maximum. At least 24 credits, including thesis, must be at the 600 level.

3. All graduate students will be expected to acquire some teaching and/or research experience in addition to thesis work as part of their M.S. degree requirements.

4. Technical electives will consist of 9 course credits approved by the advisory committee to prepare the student for his/her thesis work. At least two of the technical electives must be taken from the following list:

C.E. 603 — Arctic Engineering.....	3
Pet.E. 666 — Arctic Drilling and Well Completion.....	3
Min. 635 — Geostatistical Ore Reserve Estimation.....	3
Min. 646 — Mining Engineering in the Arctic.....	3
Min. 647 — Advanced Underground Mine Design.....	3
Min. 673 — Theoret. and Exper. Methods in Rock Mechanics or	
Min. 637 — Mine Systems Simulation.....	3
Min. 652 — Numerical Methods in Mine Ventilation.....	3
Min. 674 — Selected Topics in Rock Mechanics.....	3

### Mining Engineering — M.S. Degree — Non-Thesis Option

1. Complete the general university requirements and graduate degree requirements.
2. Complete the following program (major) requirements:

Min. 631 — Research Methods in Mineral Engineering.....	4
Min. 637 — Mine Systems Simulation or	
Min. 652 — Theoretical and Experimental methods in Rock Mechanics	
.....	3
Min. 621 — Advanced Mineral Economics.....	3
Approved Technical Electives*.....	15
Min. 688 — Graduate Seminar I.....	1
Min. 433 — Mining Access, Safety and Environmental Law.....	3
Min. 689 — Graduate Seminar II.....	1
Min. 698 — Report/Research.....	6
Total Minimum	36

At least 24 credits must be at the 600 level.

\*\*See list of approved technical electives under item 4., thesis option above.

### Engineer of Mines — E.M. Degree

1. Requirements to be fulfilled:

a. The applicant must be a graduate from the School of Mineral Engineering, University of Alaska Fairbanks, with an engineering degree.

b. A minimum of five years of responsible engineering work is required.

c. An acceptable thesis\* must be submitted.

2. The applicant must complete and submit a UAF graduate application for admission form to the Director of Admissions and Records for the engineer of mines degree program. Included with the application must be a resume of engineering work experience as mentioned in 1(b).

3. The application will be reviewed by the dean of the School of Mineral Engineering for acceptance recommendation and concurrence with the thesis topic selected.

4. The thesis will be prepared to meet the format requirements as outlined in the *Manual of Procedures and Information for Graduate Students*, including filing a copy in the university library.

5. Submission of thesis should follow the same procedures and lead-times as outlined in Degree Requirements chapter, as should the submission of the application for graduation form.

6. The dean of the School of Mineral Engineering will convene a committee of four faculty members, one from outside the school, to review the thesis, give guidance as needed and to assure that the thesis is satisfactory to meet the degree requirements and finally approve the



thesis. A defense of thesis, oral or written, will be made to the committee.

Class work beyond the initial degree is not required, and credits for the thesis will be a minimum of six.

Registration at UAF during the semester of the thesis submittal is required.

\*An "acceptable thesis" is defined as a demonstration of professional competence combined with normal research methods working with the student's committee.

## Music

### College of Liberal Arts Department of Music

Degrees: B.A., B.M., M.A., M.A.T.

Minimum Requirements for Degrees: B.A. — 130 credits; B.Mus. — 127 credits, M.A. — 30 additional credits; M.A.T. — 36 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 teacher 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 master of arts degree offers advanced training in five areas of specialization: performance, music education, music theory/composition, music history and Alaskan ethnomusicology.

The master of arts in teaching is designed primarily as a functional program for the public school music teacher. Areas of specialization are instrumental, vocal, music supervision, and elementary specialist. The program is determined by the student and his/her committee.

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. Piano majors may receive ensemble credit by performing as accompanists.

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 of 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 chordal 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.

Current and prospective music majors may obtain a copy of the music department's handbook for further information about current degree requirements.

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:

	Credits
Mus. 131-132 — Basic Theory .....	4
Mus. 133-134 — Basic Ear Training .....	4
Mus. 221-222 — History of Music .....	6
Mus. 231-232 — Advanced Theory .....	4
Mus. 233-234 — Advanced Ear Training .....	2
Mus. 331 — Form and Analysis .....	3

**Mus. 190 — Recital Attendance .....	0
Six credits to be selected from:	
Mus. 421 — Music before 1620 .....	3
Mus. 422 — Music in the 17th and 18th Century .....	3
Mus. 423 — Music in the 19th Century .....	3
Mus. 424 — Music in the 20th Century .....	3
*Mus. 161-462 — Applied Music (major area) .....	8
Ensembles (may include up to 2 credits of	
Music 307 — Chamber Music) .....	6
Mus. 253 — Piano Proficiency .....	0

3. 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.

### Music — B.M. Degree (Performance)

1. Complete the general university requirements.
2. Complete the following degree and program (major) requirements:

	Credits
Engl. 111 or equivalent and 211 or 213 .....	6
Speech Communications .....	3
Humanities (non-music) .....	15
Mathematics (including Computer Science)	
Natural Science, Social Science .....	15

### Required Music Courses:

	Credits
*Mus. 161-462 — Applied Music (major) .....	24
Mus. 131-132 — Basic Theory .....	4
Mus. 133-134 — Basic Ear Training .....	4
Mus. 221-222 — History of Music .....	6
Mus. 231-232 — Advanced Theory .....	4
Mus. 233-234 — Advanced Ear Training .....	2
Ensembles (1 per semester) .....	8

### Secondary Area:

Thirty credits to be selected from the following:	Credits
Mus. 124 — Music in World Cultures .....	3
*Mus. 153 — Functional Piano .....	1
*Mus. 161-162, 261-262, 361-362, 461-462 — Applied Music	
(Secondary Performance Area) .....	2 or 3
Mus. 223 — Alaskan Native Musics .....	3
*Mus. 307 — Chamber Music .....	1
*Mus. 313 — Opera Workshop .....	1-3
*Mus. 317 — Arctic Chamber Orchestra .....	1
*Mus. 331 — Form and Analysis .....	3
Mus. 351 — Conducting .....	3
*Mus. 421-424 — Period History .....	6
*Mus. 431 — Counterpoint .....	3
*Mus. 432 — Orchestration .....	3
*Mus. 433 — Composition .....	3
*Mus. 493 — Special Topics .....	Arr.

**Mus. 190 — Recital Attendance .....	0
Mus. 253 — Piano Proficiency .....	0

3. Minimum credits required for degree ..... 127

1. Repeatable for credit — Mus. 153, 307, 313, 317.
  2. Any level repeatable for credit — Mus. 161-162, 261-262, 361-362, 461-462. Maximum total of 6 credits.
  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.
  5. Minimum of 6 credits to be selected from Mus. 331, 431, 432, 433.
- \*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 — Secondary)

1. Complete the general university requirements.
2. Complete the following degree and program (major) requirements:

	Credits
Engl. 111 or equivalent and 211 or 213 .....	6
Speech Communications .....	3
Humanities (non-music) .....	15
Mathematics (including Computer Science), Natural Science, Social	
Science; must include Psy. 101 .....	15

### Required Music Courses:

	Credits
*Mus. 161-462 — Applied Music (major) .....	14
Mus. 131-132 — Basic Theory .....	4

Mus. 133-134 — Basic Ear Training	4
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 (1 per semester)	8
**Mus. 190 — Recital Attendance	0
Mus. 253 — Piano Proficiency	0

Courses required for Secondary Certification (Contact Department of Education before beginning Education courses):

Mus. 405 — Secondary School Music Methods	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	3
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

3. Minimum credits required..... 136

\*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.

#### Music — B.M. Degree (Music Education — Elementary)

1. Complete the general university requirements.
2. Complete the following degree and program (major) requirements:

Credits

Engl. 111 or equivalent and Engl. 211 or 213	6
Speech Communications	3
Humanities (non-music)	15
Mathematics (including Computer Science), Natural Science, Social Science; must include Psy. 101 and 6 credits of Mathematics	15

Required Music Courses:

*Mus. 161-462 — Applied Music (major)	14
Mus. 131-132 — Basic Theory	4
Mus. 133-134 — Basic Ear Training	4
Mus. 221-222 — History of Music	6
Mus. 231-232 — Advanced Theory	4
Mus. 233-234 — Advanced Ear Training	2
Mus. 309 — Elementary School Music Methods (same as Ed. 309)	3
Mus. 315 — Music Methods and Techniques	10
Mus. 331 — Form and Analysis	3
Mus. 351 — Conducting	3
Mus. 432 — Orchestration	3
Ensembles (1 per semester)	8
**Mus. 190 — Recital Attendance	0
Mus. 253 — Piano Proficiency	0

Required Education courses (Contact education department before beginning Education courses):

Psy. 240 — Developmental Psychology	3
Ed. 201 — Introduction to Education	3
Ed. 304 — Literature for Children	3
Ed. 330 — Diagnosis and Evaluation of Learning	3
Ed. 419 — Integrated Methods and Curriculum Development	6
Ed. 423 — Reading Language and Literacy	6
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

3. Minimum credits required..... 142

\*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.

#### Music — B.M. Degree

(Music Education—K-12)

1. Complete the general university requirements.
2. Complete the following degree and program (major) requirements:

Credits

Engl. 111 or equivalent and 211 or 213	6
Speech Communications	3
Humanities (non-music)	15
Mathematics (including Computer Science), Natural Science, Social Science; must include Psy. 101	15

Required Music Courses:

Credits

Mus. 131-132 — Basic Theory	4
Mus. 133-134 — Basic Ear Training	4
**Mus. 190 — Recital Attendance	0
Mus. 221-222 — History of Music	6
Mus. 231-232 — Advanced Theory	4
Mus. 233-234 — Advanced Ear Training	2
Mus. 253 — Piano Proficiency	0
Mus. 351 — Conducting	3
Mus. 331 — Form and Analysis	3
Mus. 432 — Orchestration and Arranging	3
*Mus. 161-362 — Private Lessons	12
Mus. 315 — Music Methods and Techniques	10
Mus. 405 — Secondary School Music Methods	3
Mus. 309 — Elementary School Music Methods	3
Mus. 101, 203, 205, 211 — Large Ensembles	7

Required Education Courses:

Credits

Psy. 240 — Developmental Psychology	3
Ed. 330 — Diagnosis and Evaluation of Learning	3
Ed. 201 — Introduction to Education	3
Ed. 407 — Reading Strategies for Secondary Teachers	3
Ed. 454 — 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

3. Minimum credits required..... 131

\*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.

#### MINOR in Music:

A minor in Music requires 18 credits in Music to be selected from the following:

Music Theory, History and Appreciation (courses to be selected with approval of department head)	12
Mus. 151, 153, 161-462	4
Mus. 101, 203, 205, 211	2

\*\*All undergraduate students majoring in Music must enroll in Music 190 — Recital Attendance during each semester of their residence.

#### Music — M.A. Degree

Students may select from the following areas of specialization: Performance, music education, music theory/composition, music history, and Alaskan ethnomusicology.

Each graduate student's program is individually tailored and designed to meet the student's professional interests and aspirations, consistent with the following principles and procedures:

1) General requirements for admission to graduate study are consistent with those published in the UAF catalog.

2) All applicants will take an evaluative preliminary examination to help determine areas of strength and deficiency. The examination will cover the following areas for all applicants:

- a. Music theory.
- b. Music history and literature.
- c. Demonstration of keyboard proficiency.
- d. Performance in major area.

In addition to the areas listed above, music education majors will be required to complete a section pertaining to organizations, literature, knowledge of instruments and voice, and rehearsal techniques appropriate for public school music instruction.

Composition majors must submit examples of previous work.

Performance majors must demonstrate acquaintance with solo literature of the various historical periods through audition or submission of performance tapes.

3) Applicants must also submit a proposal outlining their aspirations and interests that they wish to pursue for their degree program.

4) Upon completion of all of the above, the music department will assess its own potential to serve the needs of the student.

5) Applicants will be accepted from any accredited institution; however, before admission to a degree program, all students (including UAF graduates) must take the preliminary examination.

6) Following an applicant's admission to the program, the department head, after consultation with the applicant, will name an Advisory Committee of three faculty members, one of whom will act as chairman and academic advisor for the student. The committee will assess the results of the preliminary examination, and then guide the development and completion of the student's program.

The committee will monitor the student's progress in the program, and recommend modifications and improvements, should changes be necessary.

7) To establish a base of core curriculum requirements common to all graduate music programs, the following courses must be taken by all graduate students.

- Music 601 — *Introduction to Graduate Study* (2 Credits).
- Performance: A minimum of four credits of private lessons study at either the upper division or graduate level or two credits at either the upper division or graduate level and two credits of chamber music study, at either the upper division or graduate level. Committee may suggest further study if remedial work is deemed necessary.
- Minimum of six graduate credits (excluding Individual Study) to be selected from the following categories: music theory, music history, ethnomusicology, music literature, and Mus. 671 — *Psychology of Music* (3 credits).

8) Each student, with the approval of the advisory committee, shall develop an appropriate final project or thesis. A thesis is required for students majoring in music theory, music history and ethnomusicology. Performance majors must present a graduate recital and prepare a supporting paper on selected aspects of the recital.

9) The minimum number of credits which must be earned for a master's degree is 30 semester hours, of which 21 will be in a primary area of specialization and the balance in a secondary area.

10) Near the completion of approximately one-half of the program, the student will meet with the committee in an advisory examination. This examination will be conducted orally and will be concerned primarily with the progress the student has demonstrated, particularly with regard to determining the major area of specialization. Such specialization is not to be conceived narrowly as a thesis topic, but rather as a broad area in which the student plans to spend an appreciable amount of his scholarly career. Advisory examinations may be repeated until such time as the student has satisfactorily defined his area of specialization.

11) Each candidate for a master's degree in music who completes the necessary course work must take a substantial oral examination in the area of his/her major project, thesis, or recital.

12) Students majoring in vocal performance, music history, or ethnomusicology will be required to demonstrate proficiency of a foreign language appropriate to the area of concentration. Proficiency will be determined by the student's graduate committee in conjunction with the Department of Linguistics and Foreign Languages.

13) Graduate students studying applied music and/or presenting recitals are governed by the same regulations concerning recital preparation, recital jury prehearings, and jury examinations as apply to undergraduate students. These regulations are described in the handbook.

14) 600-level courses are restricted to graduate students only; graduate students may also elect some of their courses from the 400-level. 400-level courses are open to both upper-division undergraduate students and graduate students as well. However, at least 24 credits of the program, including thesis or research, must be at the graduate level.

15) Further information about typical two-year programs may be obtained by contacting the Music Department.

#### Music — M.A.T. Degree

See the department for further details.

## Natural Resources Management

### School of Agriculture and Land Resources Management

#### Division of Resources Management

Degrees: B.S., M.S.

Minimum Requirements for Degree: B.S. — 130 credits; M.S. — 30-35 credits

The basic 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 specific interests of students and can combine the natural resources basic program with such fields as education, communications or political science or with greater depth in natural science and resources. The program is designed for students desiring a career in resource management or in other fields in which knowledge of resource management is useful, students planning to proceed to advanced study, and students of many plans who wish to be better informed citizens about today's important resource issues. The curricula for the B.S. in natural resources management/forestry and the B.S. in natural resources management/agriculture degrees are designed to provide the same basic science background and much the same basic resource background as the general degree, but, in addition, include greater depth in either forestry or agriculture. (The NRM/forestry degree is not equivalent to an accredited B.S. in forestry degree.)

Practical experience, "hands on" field and laboratory activities and applied aspects are stressed throughout the program. Internships and work-study arrangements are often available—with or without credit, with or without pay—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 program (major) requirements:

	Credits
Biol. 105-106 — Fundamentals of Biology, I and II.....	8
Biol. 271 — Principles of Ecology.....	4
Chem. 105-106 — General Chemistry.....	8
Econ. 235 — Intro. to Nat. Resource Econ.....	3
Econ. 335 — Intermediate Natural Resource Econ.....	3
Geos. 101 — General Geology.....	3
Geos. 101L — General Geology Lab.....	1
A.L.R. 101 — Conservation of Natural Resources.....	3
A.L.R. 201 — Processes of Natural Resources Management.....	3
A.L.R. 251 — Silvics and Dendrology.....	3
A.L.R. 310 — Agriculture Concepts and Techniques.....	3
A.L.R. 340 — Natural Resources Measurements.....	3
A.L.R. 370 — Introduction to Watershed Management.....	3
A.L.R. 380 — Soils.....	3
A.L.R. 400 — Natural Resource Policies	3
or A.L.R. 401 — Natural Resource Legislation.....	3
A.L.R. 430 — Land Use Planning.....	3
A.L.R. 460 — Outdoor Recreation.....	3
W.L.F. 201 — Wildlife Management Principles.....	2

3. Plus at least 12 credits from the following courses in the environment and/or resources. Approved courses not listed here may at times be applied toward this requirement.

	Credits
A.L.R. 102 — Practicum in Natural Resources.....	1-3
A.L.R. 211 — Introduction to Agronomy and Horticulture.....	3
A.L.R. 320 — Introduction to Animal Science.....	3
A.L.R. 360 — Outdoor Recreation Planning.....	3
A.L.R. 411 — Plant Propagation.....	3
A.L.R. 450 — Forest Management.....	3
A.L.R. 461 — Interpretive Services.....	3
Biol. 471 — Population Ecology.....	3
Biol. 472 — Communities and Ecosystems.....	3
Biol. 480 — Water Pollution Biology.....	2
E.Q.S. 603 — Solid Waste and Air Pollution.....	3
Econ. 437 — Regional Economic Development.....	3
Fish. 430 — Fisheries and their Management.....	3
Geog. 327 — Cold Lands.....	3
Geog. 402 — Man and Nature.....	3
Geos. 304 — Geomorphology.....	3
Min. 101 — Minerals and Man.....	3

Min. 407 — Mineral Industry and Environment .....	2
Soc. 307 — Demography .....	3
W.L.F. 417 — Forest and Tundra .....	2
W.L.F. 419 — Wetlands .....	2
Any ALR course not used in the above categories.	

4. Plus a minimum of 12 credits in one of the following fields or subject areas beyond those taken to fulfill numbers 2 and 3 above. These courses are to be selected for their clear pertinence to a cohesive program in resource study and must be approved by the director.

Agriculture and Land Resources
Anthropology (cultural)
Biological Sciences
Broadcasting, Journalism
Civil Engineering, Engineering Sciences and/or
Environmental Quality Engineering
Business Administration
Economics
Education
Fisheries
Geography
Geosciences
Justice
Mineral Engineering
Political Science
Psychology
Sociology
Wildlife Management

5. The total program must include a minimum of 12 credits in the following social sciences: anthropology, economics, sociology, political science and/or psychology. In addition, a demonstrated proficiency in computer applications prior to the junior year is required.

6. Minimum credits required..... 130

#### Natural Resources Management/Forestry — B.S. Degree

1. Complete the general university requirements and B.S. degree requirements.
2. Complete all core (major) requirements for the B.S. in natural resources management. (category 2.)
3. Complete the following courses:

	<i>Credits</i>
CE 112 — Elementary Surveying .....	3
Bot. 331 — Systematic Botany .....	4
A.L.R. 450 — Forest Management .....	3
A.L.R. 451 — Regeneration and Silviculture of Northern Boreal Forests .....	3
A.L.R. 452 — Forest Protection .....	3
A.L.R. 453 — Harvesting and Utilization of Forest Products .....	3

4. Complete nine credits from the following list of restricted electives:

Geos. 422 — Geoscience Applications of Remote Sensing .....	3
Geos. 408 — Map and Airphoto Analysis .....	2
Fish. 430 — Fisheries Management .....	3
W.L.F. 417 — Wildlife Management — Forest and Tundra .....	2
W.L.F. 303 — Wildlife Management Techniques .....	3
B.A. 350 — Introduction to Real Estate and Land Economics .....	3
A.L.R. 312 — Intro. to Range Management .....	3
A.L.R. 300 — Internships in Natural Resources Management .....	1-6
<i>(Must Be Forestry Related)</i>	

5. Fulfill requirements of category 5 in the B.S. in natural resources management.

6. Minimum credits required..... 130

#### Preforestry Program

For students interested in a professional forestry degree, the School of Agriculture and Land Resources Management offers a two-year preforestry program that will permit them to transfer to an accredited forestry institution.

The preforestry program introduces the student to land resource management and provides lower level core courses common to most forestry curricula. Although forestry curricula vary by institution, UAF's preforestry program will allow the expeditious transfer of credits to institutions that offer accredited four-year degree programs in forestry. For example, under an agreement with Northern Arizona University, a student who has completed the preforestry program may transfer to the accredited four-year forestry program at Northern Arizona University without loss of credit or class standing.

Students desiring to complete the two-year preforestry program at UAF with the intention of transferring to a specific four-year forestry degree program elsewhere should discuss these plans with their faculty adviser before registering for classes at UAF. This will ensure a course schedule that will provide the expeditious transfer of credit.

In summary, a student who completes the preforestry program at UAF may transfer to a four-year accredited forestry degree program elsewhere, or may complete a four-year degree program at UAF in natural resources management under the forestry option.

#### Natural Resources Management/Agriculture—B.S. Degree

1. Complete the general university requirements and B.S. degree requirements.
2. Complete the following core (major) requirements for the agriculture option:

	<i>Credits</i>
Biol. 105-106 — Fundamentals of Biology, I and II .....	8
Biol. 271 — Principles of Ecology .....	4
Chem. 105-106 — General Chemistry .....	8
Chem. 321 — Organic Chemistry .....	3
Econ. 235 — Intro. to Nat. Resource Econ.3	
Econ. 335 — Intermediate Natural Resource Econ .....	3
Stat. 301 — Applied Statistics	
A.L.R. 101 — Conservation of Natural Resources .....	3
A.L.R. 102 — Practicum in Natural Resources .....	1-3
A.L.R. 211 — Introduction to Agronomy & Horticulture .....	3
A.L.R. 310 — Agricultural Concepts & Techniques .....	3
A.L.R. 320 — Introduction to Animal Science .....	3
A.L.R. 380 — Soils .....	3
A.L.R. 480 — Soil Conservation .....	3

3. Complete a minimum of 26 credits in the following natural resource electives:

	<i>Credits</i>
Geos. 101 — General Geology .....	3
Geos. 101L — General Geology Lab .....	1
A.L.R. 201 — Processes of Natural Resources Management .....	3
A.L.R. 251 — Dendrology and Silvics .....	3
A.L.R. 300 — Internship in Natural Resources Management .....	1-6
A.L.R. 312 — Introduction to Range Management .....	3
A.L.R. 313 — Introduction to Plant Pathology .....	4
A.L.R. 321 — Applied Animal Nutrition .....	3
A.L.R. 340 — Natural Resources Measurements .....	3
A.L.R. 370 — Introduction to Watershed Science .....	3
A.L.R. 400 — Natural Resources Policies .....	3
A.L.R. 401 — Natural Resources Legislation .....	3
A.L.R. 403 — Managing Food Production Systems .....	4
A.L.R. 411 — Plant Propagation .....	3
A.L.R. 412 — Field Crop Production .....	3
A.L.R. 420 — Animal Nutrition and Metabolism .....	3
A.L.R. 425 — Alaska's Reindeer Industry .....	3
Any other approved ALR course not used in the above categories.	

4. Complete a minimum of 12 credits from the following list of courses:

	<i>Credits</i>
Biol. 210 — Animal Physiology .....	4
Bot. 239 — Plant Form and Function .....	4
Biol. 342 — Introductory Microbiology .....	4
Biol. 362 — Principles of Genetics .....	4
Bot. 331 — Systematic Botany .....	4
Biol. 406 — Entomology .....	4
Bot. 416 — Plant Physiology .....	3

5. Complete a minimum of 12 credits in one of the following fields or subject areas beyond those taken to fulfill categories 2 and 3 above. These courses are to be selected for their clear pertinence to a cohesive program in resource study and must be approved by the Plant and Animal Science Division Head.

Agriculture and Land Resources
Biological Sciences
Broadcasting, Journalism
Business Administration
Chemistry
Civil Engineering, Engineering Sciences and/or
Environmental Quality Engineering
Computer Science
Economics
Education
Geography
Geosciences
Political Science
Rural Development
Statistics
Wildlife Management

6. The total program must include a minimum of 12 credits in the following social sciences: anthropology, economics, sociology, political science, and/or psychology. In addition, a demonstrated proficiency in computer applications prior to the junior year is required.

7. Minimum credits required..... 130

**Natural Resources Management — M.S. Degree**

1. Complete the general university requirements and graduate degree requirements.

2. General Requirements: All candidates will meet the general requirements for the degree; individual programs may emphasize one of the following areas; forest management, soil management, parks and recreation, agriculture, watershed management, and land use planning.

a. Candidates must have or acquire a general familiarity with the major resource fields listed above, and in addition, wildlife management, environmental quality management, and mineral industries. Program depth in any one field will depend on the needs of the candidate and the capabilities of the university. For some fields, students will take additional courses at other universities that specialize in those fields.

b. Candidates must have course work, prior to or within the program, in computer science, statistical methods, and basic economics.

**3. Program requirements:**

a. *Thesis degree:* Designed for those intending to pursue management careers requiring thorough familiarity with research procedures and techniques in one or more of the resource fields, to proceed to doctoral programs, and/or to conduct research in management problems.

**Required courses:**

	Credits
A.L.R. 630 — Planning Theory .....	3
A.L.R. 631 — Planning Practicum .....	3
A.L.R. 692 — Graduate Seminar .....	4
A.L.R. 699 — Thesis .....	6-12
600-Level approved elective .....	3

*Additional courses:* a minimum of 5-11 credits, depending on thesis credits, individual student previous training and program needs, and approval by graduate committee.

Minimum required credits past the baccalaureate degree is 30.

b. *Non-thesis degree:* Designed for those planning for a management career involving largely non-research aspects such as general planning and administration, communication and public information, and impact assessment. The requirements are similar to the above with the following exceptions:

- 1) a 3-credit hour research paper will replace the 6-12 hour thesis;
- 2) additional courses; minimum credit will be increased to 19;
- 3) minimum number of credits required past the baccalaureate degree is 35.

4. At least 24 credits of the program, including thesis and/or research, must be at the 600 level.

**Admission Requirements:**

1. Baccalaureate degree in appropriate undergraduate major.
2. Students desiring degree programs emphasizing socio-economic aspects of natural resources management must have strong undergraduate backgrounds in the social sciences, while those wishing in-depth work in any of the specific resource fields for which the University of Alaska Fairbanks does not have a strong undergraduate program at present, must have undergraduate degrees in such fields.
3. Scores of the general aptitude sections of the Graduate Record Examination.
4. Brief statement of career goals, research area of particular interest, and why UAF seems suited to student needs.

**Research Areas:**

Thesis research will be directed toward problems specifically related to management of natural resources in high latitudes, and may involve, at various levels, basic information; biological-physical aspects of management on the land; and relationship of various management practices to the situation in Alaska at present and in the foreseeable future with respect to land ownership patterns, land use and planning, economic trends, competing resources needs and wants, and knowledge of implications of various resource uses needed for informed decision making.

**Northern Studies****Interdisciplinary**

Degree: B.A.

Minimum Requirements for Degree: B.A. — 130 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, History 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. This program is currently being reviewed and may undergo curriculum revision during the academic year 1987-1988.

**Requirements****Northern Studies — B.A. Degree**

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

2. Complete the following program (major) requirements:

	Credits
Anth. 242 — Native Cultures of Alaska .....	3
Geog. 327 — Cold Lands .....	3
Hist. 380 — Polar Exploration and its Literature .....	3
A.L.R. 101 — Conservation of Natural Resources .....	3
Participate in the following seminar during the junior or senior year:	
Hist. 484 — Northern Studies Seminar .....	3

In addition, the student should take at least one course in five of the following six areas and sufficient other courses in one of the areas to equal a total of 18 credits:

<b>Anthropology:</b>	
Anth. 240 — Native Peoples of North America .....	3
Anth. 309 — Arctic Prehistory .....	3
Anth. 321 — Human Population Biology (Circumpolar Regions) .....	3

**Linguistics:**

Any linguistics or Alaska Native language or Eskimo language course or courses .....

**Earth Sciences:**

Geog. 205 — Elements of Physical Geog. ....	3
Geog. 302 — Geography of Alaska .....	3
Geog. 306 — Geography of the Soviet Union .....	3
Geog. 401 — Weather and Climate .....	3
Geos. 462 — Glacial Geology .....	4

**History:**

Hist. 354 — Canadian History to 1854 .....	3
Hist. 341 — History of Alaska .....	3
Hist. 344 — Modern Russia .....	3
Hist. 375 — History of the Northern Pacific .....	3
P.S. 263 — Alaska Native Politics .....	3

**Ecology:**

Biol. 104 — Natural History of Alaska .....	3
Biol. 271 — Principles of Ecology .....	4
W.L.F. 417 — Wildlife Mgmt.: Forest and Tundra .....	2

**Sociology:**

Soc. 201 — Social Problems .....	3
Soc. 408 — American Minority Groups .....	3

With the approval of the committee, students may make substitutions for some of the requirements in these areas by taking such relevant courses as: arctic engineering; economics of natural resources; arctic oceanography; and such other courses as are approved by the committee.

3. Minimum credits required .....

**Oceanography****School of Fisheries and Ocean Sciences****Graduate Program in Marine Sciences and Limnology**

Degree: M.S., Ph.D.

Minimum Requirements for Degree: M.S. — 30 credits; Ph.D. (open)

**Requirements**

Oceanography is both interdisciplinary and multidisciplinary. The emphasis in oceanography is on processes influencing the ocean's circulation, composition, biological productivity and geology. Students considering graduate study in oceanography should have a strong

background in one of the sciences (physics, chemistry, biology, geology, mathematics) and a working familiarity with the others. 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. Students entering both the M.S. and Ph.D. program are expected to complete a core curriculum dealing with the various areas of oceanography. Additional courses are selected from other areas in the university to assure a high level of competence in the student's area of major interest. Research is the major emphasis in the M.S. and Ph.D. programs. Challenging and significant problems are available for degree research.

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, 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 R/V Alpha Helix, which has open-ocean capabilities and operates in Alaskan coastal waters, the Gulf of Alaska, and the Bering Sea, the R/V Little Dipper, which operates on day trips in Resurrection Bay, and the R/V Maybeso, which operates in southeast Alaskan waters. Laboratory facilities include a seawater system at Seward and a variety of modern and analytical instrumentation, including mass spectrometers, a variety of alpha, gamma and beta counting equipment, a flow cytometer facility, and a variety of gas and liquid chromatography equipment. Mainframe and personal computing facilities are readily accessible to graduate students.

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 fellowship support is available. Most students are supported on research projects that relate directly to their degree research.

#### Oceanography — M.S. Degree

1. Complete the general university requirements and master's degree requirements.
2. Complete a minimum of 30 credits including MSL 620, 630, 650 and 660 (or equivalents) except that fisheries oceanographers will take MSL 640 and any three of the above courses. All oceanographers will complete three credits of MSL 692. At least 24 credits, including thesis and/or research, must be at the 600 level.
3. Field experience aboard an oceanographic research vessel must be demonstrated by oceanography majors.

#### Oceanography — Ph.D. Degree

There are no fixed course requirements, nor is an M.S. degree required to obtain the Ph.D. degree. This degree is awarded for proven ability and scholarly attainment and each candidate's program is planned with his or her graduate advisory committee. A candidate for the Ph.D. degree in the marine science program will be expected to have course work at least equivalent to that required for the M.S. degree.

(See also, "Marine Biology")

## Office Professions

### School of Career and Continuing Education Business Systems and Technology Department

Certificate; Degree: A.A.S.

Minimum Requirements for Degree — 60 credits; for Certificate — 30 credits

The Office Professions 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 Professions — A.A.S. Degree

1. Complete the following general degree requirements: Credits

Written Communications..... 3

(Engl. 111 required)

Oral Communications .....	3
Select a total of 6 credits from the following areas:	
Humanities or	
Social Science or	
Math or	
Natural Science .....	6
Subtotal.....	15

### 2. Complete the following major degree requirements:

Acct. 101 — Elementary Accounting .....	3
or	
ABUS 142 — Office Accounting I .....	
and	
ABUS 143 — Office Accounting II .....	4
O.P. 105 — Keyboarding II/Intermediate Typewriting .....	3
O.P. 106 — Keyboarding III/Advanced Typewriting.....	3
O.P. 131 — Business English .....	3
O.P. 151 — Microcomputer Word Processing.....	2
a. Intro to Multimate (1 cr)	
b. Intro to WordPerfect (1 cr)	
c. Intro to DisplayWrite (1 cr)	
d. Advanced Applications in Multimate (1 cr)	
e. Advanced Applications in WordPerfect (1 cr)	
f. Advanced Applications in DisplayWrite (1 cr)	
O.P. 207 — Machine Transcription.....	2
O.P. 221 — Filing/Records Management.....	3
O.P. 231 — Business Communications.....	3
O.P. 244 — Office Procedures .....	3
Subtotal.....	(minimum of) 25-26

### 3. Complete 13 (minimum) credits from the following major specialty electives:

Acct. 102 — Elementary Accounting .....	3
ABUS 155 — Business Math .....	2
O.P. 090 — Calculating Machines.....	2
O.P. 100 — Alphabetic Shorthand .....	3
O.P. 101 — Shorthand Principles I.....	4
O.P. 102 — Shorthand Principles II.....	4
O.P. 128 — Word Processing/DisplayWriter.....	2
O.P. 201 — Shorthand Principles III .....	3
O.P. 210 — Legal Typewriting.....	3
O.P. 219 — Legal Machine Transcription.....	1
O.P. 211 — Medical Typewriting.....	2
O.P. 214 — Medical Machine Transcription .....	1
O.P. 228 — Word Processing/Reportpack .....	1
Any other CAPS, Abus, or O.P. course .....	1-6

### 4. Complete 7 general electives credits .....

7  
Degree Total .....

60  
A calculating machines proficiency exam must be passed to complete degree requirements.

### Office Professions — Certificate

#### 1. Complete the following major specialty requirements: Credits

Acct. 101 — Elementary Accounting.....	3
or	
O.P. 142 — Office Accounting I.....	2
O.P. 105 — Keyboarding II/Intermediate Typewriting .....	3
O.P. 106 — Keyboarding III/Advanced Typewriting.....	3
O.P. 131 — Business English .....	3
O.P. 151 — Microcomputer Word Processing.....	2
a. Intro to Multimate (1 cr)	
b. Intro to WordPerfect (1 cr)	
c. Intro to DisplayWrite (1 cr)	
d. Advanced Applications in Multimate (1 cr)	
e. Advanced Applications in WordPerfect (1 cr)	
f. Advanced Applications in DisplayWrite (1 cr)	
O.P. 203 — Calculating Machines.....	2
O.P. 221 — Filing/Records Management.....	3

#### 2. Complete 10 credits from the following major specialty electives:

Acct. 102 — Elementary Accounting II .....	3
or	
ABUS 143 — Introduction to Accounting II .....	2
ABUS 154 — Human Relations .....	3
ABUS 155 — Business Math .....	2
O.P. 100 — Alphabetic Shorthand .....	3
O.P. 101 — Shorthand Principles I.....	4
O.P. 102 — Shorthand Principles II.....	4
O.P. 128 — Word Processing/DisplayWriter.....	2
O.P. 210 — Legal Typewriting.....	2
O.P. 219 — Legal Machine Transcription.....	1
O.P. 211 — Medical Typewriting.....	2
O.P. 214 — Medical Machine Transcription .....	1
O.P. 228 — Word Processing/ReportPack .....	1
O.P. 231 — Business Communications .....	3

O.P. 244 — Office Procedures .....	3
Any other CAPS, ABUS or O.P. course.....	3
Certificate Total.....	30-32

## Paraprofessional Counseling

### School of Career and Continuing Education Service Industry Department

Degree: A.A.S.

Minimum Requirements for Degree: 60 credits

Paraprofessional counseling is a program designed to provide basic training for entry into the job market. It is also a program for personal enrichment. The major role of the paraprofessional counselor is to offer support counseling to those experiencing life changes. Possible areas of employment include alcohol and drug, crisis intervention, mental health and correctional institution programs.

#### Program Requirements

1. Three letters of recommendation, submitted to the program adviser.
2. A personal interview with the adviser of the counseling program.
3. A minimum grade of "C" will be required in each major degree requirement course as well as in Psy. 101 and Soc. 101.

## Requirements

### Paraprofessional Counseling — A.A.S. Degree

1. Complete the following general degree requirements:

Written Communications.....	6
(Engl. 111 required)	
Oral Communications.....	3
Select a total of 6 credits from the following areas:	
Humanities or	
Social Science or	
Math or	
Natural Science.....	6
Subtotal.....	15

2. Complete the following major degree requirements:

P.P.C. 101 — Basic Models of Human Personality and Counseling Systems I.....	3
P.P.C. 102 — Personality and Counseling Systems II.....	3
P.P.C. 103 — Basic Human Problems and Evaluation I.....	3
P.P.C. 104 — Basic Human Problems and Evaluation II.....	3
P.P.C. 105 — Basic Helping Skills.....	3
P.P.C. 106 — Advanced Helping Skills.....	3
P.P.C. 201 — Principles of Group Counseling.....	3
P.P.C. 206 — Paraprofessional Roles and Ethics.....	3
P.P.C. 289 — Practicum.....	6
Subtotal.....	30

3. Complete 6 credits from the following major specialty electives:

P.P.C. 202 — Advanced Work with Group Counseling.....	3
P.P.C. 203 — Alcohol/Drug Abuse.....	3
P.P.C. 204 — Working with Family and Marriage Problems.....	3
P.P.C. 205 — Working with People of Other Cultures.....	3
P.P.C. 207 — Personal Awareness and Growth.....	3
Soc. 242 — The Family.....	3
Subtotal.....	6

4. Complete 9 general electives credits..... 9

Degree Total 60

## Petroleum Engineering

### School of Mineral Engineering Department of Petroleum Engineering

Degrees: B.S., M.S.

Minimum Requirements for Degrees: B.S. — 133 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.

The M.S. program is intended to provide the student with an advanced treatment of petroleum engineering concepts. Students with B.S. degrees in petroleum, chemical or mechanical engineering may be accepted to the programs as full fledged candidates while those with degrees in peripheral fields may be accepted without class standing and advanced without class standing and advanced to candidacy following the completion of certain prerequisite courses. A number of generous research and teaching assistantships are available for the qualified candidate.

## Requirements

### Petroleum Engineering — B.S. Degree

1. Complete the general university requirements.
2. Complete the following degree and program (major) requirements:

#### First Year

<i>Fall Semester</i>	16 Credits
Pet.E. 103 — Survey of the Energy Industry.....	2
Math. 200 — Calculus I.....	4
Chem 105 — General Chemistry.....	4
Engl. 111 — Methods of Written Communication.....	3
Humanities or Social Science Elective <sup>1</sup> .....	3

#### Spring Semester

<i>Spring Semester</i>	17 Credits
E.S. 201 — Computer Techniques.....	3
Math. 201 — Calculus II.....	4
G.E./Geos. 261 — Geology for Engineers <sup>2</sup> .....	3
Chem 106 — General Chemistry II.....	4
*Speech Communication Elective.....	3

#### Second Year

<i>Fall Semester</i>	17 Credits
Pet.E. 205 — Introduction to Petroleum Drilling and Production.....	3
Math. 202 — Calculus III.....	4
Phys. 211 — General Physics I.....	4
Engl. 211/213 — Intermediate Exposition <sup>3</sup> .....	3
Humanities or Social Science Elective <sup>1</sup> .....	3

#### Spring Semester

<i>Spring Semester</i>	17 Credits
E.S. 208 — Mechanics.....	4
Math. 302 — Differential Equations.....	3
Phys. 212 — General Physics II.....	4
E.S. 346 — Basic Thermodynamics.....	3
Humanities or Social Science Elective <sup>1</sup> .....	3

#### Third Year

<i>Fall Semester</i>	16 Credits
Pet.E. 301 — Reservoir Rock Properties.....	3
Math. 310 — Numerical Analysis.....	3
E.S. 331 — Mechanics of Materials.....	3
E.S. 341 — Fluid Mechanics.....	4
Humanities or Social Science Elective <sup>1</sup> .....	3

#### Spring Semester

<i>Spring Semester</i>	18 Credits
Pet.E. 302 — Well Logging.....	3
Pet.E. 305 — Underground Fluid Behavior and Lab.....	4
Pet.E. 426 — Drilling Engr. & Lab.....	4
M.E. 441 Heat and Mass Transfer.....	3
Geos. 370 — Struct. Geol. for Petr. Engr.....	4

#### Fourth Year

<i>Fall Semester</i>	18 Credits
Pet.E. 407 — Production Engr. & Lab.....	4
Pet.E. 421 — Subsurface Engineering.....	3
Pet.E. 431 — Natural Gas Engineering.....	2
Pet.E. 476 — Reservoir Engineering.....	3
*Engineering Elective (e.g. ME 416 or E.S. 307).....	3
*Technical Elective (e.g. C.E. 603 Arctic Engr.).....	3

#### Spring Semester

<i>Spring Semester</i>	14 Credits
Pet.E. 456 — Pet. Eval. and Econ. Dec.....	3
Pet.E. 466 — Petroleum Recovery Meth.....	3
Pet.E. 478 — Well Test Analysis.....	2
Pet.E. 489 — Reservoir Simulation.....	2
Humanities or Social Science Elect <sup>1</sup> .....	4

#### Notes:

<sup>1</sup> Sixteen credits in humanities and social sciences are required. All electives must be approved by the petroleum engineering faculty advisor. At least 6 of the 16 credits must be (a.) above the 100-level or (b.) advanced courses in a 100-level

sequence; and at least 3 credits must be in the humanities and 3 in the social science designation.

<sup>2</sup> Geos. 101 may be taken in a fall semester in place of G.E. 261.

<sup>3</sup> As approved by advisor.

<sup>4</sup> As approved by the Board of Architects, Engineers and Land Surveyors, students are required to take the EIT exam as a condition of graduation.

### Petroleum Engineering — M.S. Degree — Thesis Option

1. General Requirements: (a) The student must complete the general university requirements and master's degree requirements; (b) the student must complete at least 24 semester units of course work and a minimum of 6 units of thesis detailing the research done on a project approved by the student's committee; (c) the student must earn a satisfactory score on a written comprehensive exam prior to submission of the thesis, and must subsequently present an oral defense of the thesis.

2. Course Requirements: Core courses for a total of 12 semester hours will be required of all students for the master of science degree in petroleum engineering. These courses are listed below:

A. Core Courses:	Credits
C.E. 603 — Arctic Engineering .....	3
Pet.E. 610 — Advanced Reservoir Engineering .....	3
Pet.E. 620 — Introductory Graduate Seminar .....	1
Acct. 623 — Property Valuation and Petroleum Accounting .....	3
Pet.E. 650 — Advanced Topics in Petroleum Engineering .....	2
B. In addition, 3 hours of advanced level mathematics and 3 hours of geology electives must be completed. Course selection will be subject to the approval of the student's committee.	
Advanced Engr. Math. Electives .....	3
Geology Elective .....	3
C. Two additional petroleum engineering electives will be required from the following list of courses to be offered in rotation, each course being taught every third semester:	
Pet.E. 661 — Advanced Well Testing .....	3
Pet.E. 662 — Enhanced Oil Recovery .....	3
Pet.E. 663 — Advanced Reservoir Simulation .....	3
Pet.E. 664 — Geothermal Reservoir Engineering .....	3
Pet.E. 665 — Advanced Phase Behavior .....	3
Pet.E. 666 — Arctic Drilling and Well Completion .....	3
Pet.E. Elective .....	6
D.	
Pet.E. 699 — Thesis .....	6
Total	30

### Petroleum Engineering — M.S. Degree — Non-Thesis Option

All of the requirements for the M.S. Thesis Option must be met except that the thesis requirements and credits are replaced with 6 additional credits of Petroleum Engineering coursework and submission of an engineering design report for 3 credits.

1. General Requirements: (a) The student must complete the general university requirements and master's degree requirements; (b) the student must complete at least 30 semester units of course work and a minimum of 3 credits in an engineering design report approved by the student's committee; (c) the student must earn a satisfactory score on a written comprehensive exam.

2. Course Requirements: Core courses for a total of 12 semester hours will be required of all students for the master of science degree in petroleum engineering. See A under the thesis option for a listing of these courses .....	Credits
12	
In addition, 3 hours of advanced level mathematics and 3 hours of geology elective must be completed. Course selection will be subject to the approval of the student's committee .....	6
Four additional petroleum engineering electives will be required from the list of courses in "C" under the thesis option .....	12

Complete the following:

Pet.E. 698 — Engineering Project .....	3
Total	33

## Philosophy

### College of Liberal Arts

#### Department of Philosophy and Humanities

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 program (major) requirements:

Complete 6 credits of mathematics at the 100 level or above.

Complete two years at the college level in a non-English language.

Complete 33 credits in philosophy, including:

	Credits
Phil. 201 — Introduction to Philosophy .....	3
Phil. 202 — Introduction to Eastern Philosophy .....	3
Phil. 204 — Introduction to Logic .....	3
Phil. 351-352 — History of Philosophy and Science .....	6
Phil. 471 — Contemp. Philosophical Problems .....	3
Phil. 493 — Special Topics .....	3

Choose two of the following:

Phil. 321 — Aesthetics .....	3
Phil. 322 — Ethics .....	3
Phil. 341 — Epistemology .....	3
Phil. 342 — Metaphysics .....	3

Choose two of the following:

Phil. 481 — Philosophy of Science .....	3
Phil. 482 — Comparative Religion .....	3
Phil. 483 — Philosophy of Social Science .....	3
Phil. 484 — Philosophy of History .....	3

3. 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.

4. Minimum credits required..... 130

**MINOR in Philosophy:** A minor in philosophy requires 18 credits of approved philosophy courses including:

	Credits
Phil. 201 — Introduction to Philosophy .....	3
Phil. 351-352 — History of Philosophy and Science .....	6
Phil. 471 — Contemp. Philosophical Problems .....	3

Choose six credits from the following:

Phil. 202 — Intro. to Eastern Philosophy .....	3
Phil. 204 — Introduction to Logic .....	3
Phil. 321 — Aesthetics .....	3
Phil. 322 — Ethics .....	3
Phil. 341 — Epistemology .....	3
Phil. 342 — Metaphysics .....	3
Phil. 481 — Philosophy of Science .....	3
Phil. 482 — Comparative Religion .....	3
Phil. 483 — Philosophy of Social Science .....	3
Phil. 484 — Philosophy of History .....	3
Phil. 493 — Special Topics .....	Arr.

## Physical Education

### College of Liberal Arts

#### Department of Physical Education

Degrees: B.A., B.S.

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

The curriculum in physical education encompasses three programs of instruction: an academic discipline, a teacher certification specialty, and a program for individual development in physical activities.

1. The academic discipline of physical education, which can be a major or minor area of study for a bachelor's degree, is the study of human beings engaged in sport and physical activities which serve as expressions of their physical and competitive natures.

2. Courses which relate to teaching physical education or coaching athletic teams in school or recreation programs can be added to academic discipline courses to complete a teaching or coaching specialty for state certification.

3. Finally, a program of courses is provided for the general and professional student to acquire individual skills, attitudes, knowledge, and physical fitness for participation in selected sports and physical activities.





John Lyle of Fairbanks; (left) and Dale Finlay of Kodiak run through the woods on campus, close to the finish of the Equinox Marathon. Each year, the marathon attracts long distance runners from around the state.

## Requirements

### Physical Education — B.A. or B.S. Degree

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

2. Complete the following background requirements:

	Credits
Chem. 103 or 104 — Contemporary Chemistry .....	4
Biol. 111-112 — Human Anatomy and Physiology I and II.....	8
Math. 107 — Elementary Functions or Math 161 — Algebra for Business and Economics or Math 171 — Mathematics for Life Sciences .....	3

3. Complete the following program (major) requirements:

#### Required Courses (22 Credits)

P.E. 205 — Introduction to the Human Movement Sciences .....	2
P.E. 232 — Analysis of Human Movement .....	3
P.E. 246 — Advanced First Aid .....	3
P.E. 316 — Motor Development .....	3
P.E. 405 — Concepts and Design of Physical Fitness Activities .....	2
P.E. 421 — Physiology of Exercise .....	4
P.E. 432 — Biomechanics of Physical Performance .....	4
P.E. 437 — Adapted Programs of Physical Activity .....	3

#### Elective Courses (select a minimum of 8 credits)

For Elementary, Secondary, or K-12 Teaching Certification, students are required to complete one winter sport, one individual sport, one team sport, and five electives from the 200 fundamentals series.

P.E. 211 — Fundamentals of Softball .....	1
P.E. 212 — Fundamentals of Basketball .....	1
P.E. 213 — Fundamentals of Ice Sports .....	1
P.E. 214 — Fundamentals of Snow Sports .....	1
P.E. 215 — Fundamentals of Volleyball .....	1
P.E. 216 — Fundamentals of Rhythms .....	1**
P.E. 217 — Fundamentals of Recreational Activities .....	1**
P.E. 218 — Fundamentals of Soccer .....	1
P.E. 219 — Fundamentals of Aquatics .....	1
P.E. 220 — Fundamentals of Wrestling .....	1
P.E. 221 — Fundamentals of Gymnastics .....	1**
P.E. 222 — Fundamentals of Track and Field .....	1**

#### Elective Courses (select a minimum of 4 courses.)

P.E. 300 — Advanced Techniques of Gymnastics .....	1
P.E. 302 — Advanced Techniques of Basketball .....	1
P.E. 303 — Advanced Techniques in Ice Sports .....	1
P.E. 304 — Advanced Techniques in Snow Sports .....	1
P.E. 305 — Techniques in Volleyball .....	1
P.E. 306 — Techniques in Teaching Creative Dance .....	1**
P.E. 307 — Techniques in Camping and Outdoor Recreation .....	1**
P.E. 308 — Techniques in Track and Field .....	1
P.E. 309 — Aquatics Instructor .....	2
P.E. 310 — Techniques in Teaching Folk and Square Dance .....	1

#### Elective Courses (select a minimum of 7 credits)

P.E. 317 — Motor Learning .....	3
P.E. 321 — Practicum in Physical Education .....	1*
P.E. 327 — Movement Activities for Children .....	2*
P.E. 401 — Theory of Basketball .....	2
P.E. 406 — Methods of Teaching P.E. .....	3*
P.E. 411 — Sports and Physical Activity in American Society .....	3**
P.E. 412 — Principles and Problems in Athletic Coaching .....	3
P.E. 425 — Administration of P.E. and Athletics .....	3*
P.E. 440 — Prevention and Care of Athletic Injuries .....	3
P.E. 442 — Evaluation in Physical Education .....	3*

4. Minimum credits required.....130

\*Required by the Physical Education Department for those majors who wish to be considered for Elementary, Secondary or K-12 Teaching Certification.

\*\*Required for K-12 Certification.

### Elementary or Secondary Teaching Certification:

In addition to the 22 required, 8 elective credits from the 200 (Fundamentals) series, and 4 elective classes from the 300-310 series, students working toward teacher certification with the B.S. or B.A. in Physical Education must complete:

P.E. 321 — Practicum in Physical Education .....	1
P.E. 327 — Movement Activities for Children .....	2
P.E. 406 — Methods and Materials in Teaching P.E. .....	3
P.E. 425 — Administration of P.E. and Athletics .....	3
P.E. 442 — Measurement and Evaluation in Physical Education .....	3
Total	12

AND the required courses from the Education Department.

### K-12 Teaching Certification:

In addition to the 22 required credits, 8 elective credits from the 200 (Fundamentals) series, and 4 elective classes from the 300-310 series,

students working toward K-12 teacher certification with the B.S. or B.A. in Physical Education must complete:

P.E. 306 — Techniques in Teaching Creative Dance .....	1
P.E. 307 — Techniques in Camping and Outdoor Recreation .....	1
P.E. 321 — Practicum in Physical Education .....	2*
P.E. 327 — Movement Activities for Children .....	2
P.E. 406 — Methods of Teaching Physical Education .....	3
P.E. 411 — Sports and Physical Activity in American Society .....	3
P.E. 425 — Administration of P.E. and Athletics .....	3
P.E. 442 — Measurements and Evaluation in Physical Education .....	3

\*Students are required to complete one semester (1 credit) in an approved practicum with elementary school children and one semester (1 credit) of an approved practicum on campus.

AND the following courses required by the Department of Education for certification:

Psy. 240 — Developmental Psychology in Cross-Cultural Perspective .....	3
Ed. 201 — Introduction to Education .....	3
Ed. 330 — Diagnosis and Evaluation of Learning .....	3
Ed. 407 — Reading Strategies for Secondary Teachers .....	3
Ed. 454 — 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

### 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.

## 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.

**Undergraduate Program** — 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.

**Graduate Program** — 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, radio wave propagation and scattering, solar-terrestrial relations, and polar meteorology.

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.

## 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. 211-212 — General Physics .....	8

Phys. 213 — Elementary Modern Physics..... 3  
 Complete a minor in mathematics, which includes Math. 200-201-202, and 6 credits at the 300-level or above.  
 Complete 20 additional credits of approved courses in physics.

3. 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.

3. Minimum credits required..... 130

#### Suggested Curriculum for B.S. Degree

##### First Year

Fall Semester 16 credits

Engl. 111 — Methods of Written Communication ..... 3

Math. 200 — Calculus ..... 4

Chem. 105 — General Chemistry ..... 4

Biol. 105 or Geol. 101 ..... 4

Phys. 113 ..... 1

Spring Semester 18 credits

Speech Communication Elective ..... 3

Phys. 211 — General Physics ..... 4

Math. 201 — Calculus ..... 4

Chem. 106 — General Chemistry ..... 4

E.S. 201 — Computer Techniques ..... 3

##### Second Year

Fall Semester 18 credits

Math. 202 — Calculus ..... 4

Phys. 212 — General Physics ..... 4

Engl. 211 — Intermediate Exposition with Modes of Literature

or Engl. 213 — Intermediate Exposition ..... 3

Geol. 101 or Biol. 105 ..... 4

Humanities/Social Science elective ..... 3

Spring Semester 16 credits

Math. 302 — Differential Equations ..... 3

Phys. 213 — Elementary Modern Physics ..... 3

Humanities/Social Science electives ..... 6

Math. 314 — Linear Algebra ..... 3

Free electives ..... 1

##### 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 ..... 2

Humanities/Social Science electives ..... 3

Spring Semester 16 credits

Math. 422 — Applied Analysis II ..... 4

Phys. 312 — Mechanics ..... 4

Phys. 332 — Electricity and Magnetism ..... 3

Phys. 382 — Physics Laboratory ..... 2

Humanities/Social Science electives ..... 3

##### Fourth Year

Fall Semester 16 credits

Phys. 411 — Modern Physics ..... 4

Phys. 313 — Thermodynamics ..... 4

Phys. 462 — Optics ..... 4

E.S. 307 — Elements of Electrical Engineering ..... 3

Free elective ..... 1

Spring Semester 16 credits

Phys. 412 — Modern Physics ..... 4

Phys. 445 — Solid State Physics ..... 3

E.S. 308 — Instrumentation and Measurement ..... 3

Free electives ..... 6

#### MINOR in Physics:

A minor in Physics requires 12-16 credits.

#### Physics — M.A.T. Degree

See the head of the department for information.

#### Physics — M.S. Degree

1. Complete the general university requirements and master's degree requirements.

2. Complete a minimum of 30 credits of approved courses, including Phys. 699, Thesis. At least 24 credits, including Thesis and/or Research, must be at the 600 level.

#### Physics — Ph.D. Degree

1. Complete the general university requirements and Ph.D. requirements.

2. Complete required program as arranged by conference with the graduate advisory committee and in accordance with the physics department manual of *Policies and Procedures* for graduate students.

## 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 man's 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 the 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.

2. Complete the following social science distribution requirements. (May be used to meet general B.A. requirements):

Econ. 201-202 — Principles of Economics I and II

(may substitute another economics course for Econ. 201 or 202 on the recommendation of adviser)..... 6

Hist. 131-132 — History of the U.S. .... 6

Just. 110 — Introduction to Justice

or Psy. 101 — Introduction to Psychology

or Soc. 101 — Introduction to Sociology ..... 3

3. Complete 30 credits in political science, beyond P.S. 101 including:

Three Credits in Policy & Administration from:

P.S. 102 — Introduction to American Government and Politics..... 3

P.S. 210 — Alaska Government and Politics..... 3

P.S. 211 — State and Local Government ..... 3

P.S. 212 — Introduction to Public Administration..... 3

P.S. 263 — Alaska Native Politics ..... 3

Six Credits in Comparative Politics as follows:

P.S. 201 — Comparative Politics: Methods of Political Analysis ..... 3

Choose one of the following:

P.S. 202 — Comparative Politics: Contemporary Doctrines and Structures..... 3

P.S. 310 — The Politics of Post-Industrial States..... 3

P.S. 311 — Government and Politics of the Soviet Union ..... 3

P.S. 312 — Government and Politics of China ..... 3

Six Credits in International Politics from:

P.S. 321 — International Politics ..... 3

P.S. 322 — International Relations..... 3

P.S. 437 — American Foreign Policy and National Security..... 3= 480

— The United Nations, Model United Nations and International Administration..... 1-3

P.S. 481 — Geopolitics and the International Environment..... 3

Three credits in Law and National Government Institutions from:

P.S. 301 — American Presidency ..... 3

P.S. 302 — Congress and Public Policy..... 3

P.S. 435 — The Supreme Court and the American Legal System..... 3

P.S. 436 — The Courts and Civil Liberties..... 3

Six credits in Political Theory from:

P.S. 315 — American Political Thought ..... 3

P.S. 411 — Classical Political Theory ..... 3

P.S. 412 — Modern Political Theory ..... 3

P.S. 415 — Contemporary Political Theory..... 3

Six credits in Political Behavior as follows:

P.S. 400 — Political Science Research Methods ..... 3

Choose one of the following:

P.S. 401 — Political Behavior: Organizations ..... 3

P.S. 402 — Political Behavior: Individuals.....	3
P.S. 403 — Public Policy.....	3

**MINOR in Political Science**

A minor in Political Science requires 15 credits distributed as follows:

	Credits
P.S. 101 — Introduction to American Government and Politics.....	3
Three credits in policy and administration from the following:	
P.S. 102, 210, 211, 212, or 263.....	3
Three credits in comparative politics from the following:	
P.S. 201, 202, 310, 311, or 312.....	3
Three credits in international politics from the following:	
P.S. 321, 322, 437, 480 or 481.....	3
Three credits in political theory from the following:	
P.S. 315, 411, 412, or 415.....	3

**Psychology****Rural College****Department of Behavioral Sciences and Human Services**

Degrees: B.A., B.S.

Minimum Requirements for Degrees: 120 credits.

Psychology seeks to guide the student in an understanding of human behavior. The field of psychology is necessary for students who are preparing for graduate study in psychology and also is helpful in preparing for other career fields.

**Requirements****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 departmental core requirements:

Psy. 101 — Introduction to Psychology.....	3
* Soc. 101 — Introduction to Sociology.....	3
Psy./Soc. 250 — Introductory Statistics for Behav. Sci.....	3
Psy. 240 — Develop. Psychology in Cross-Cultural Persp.....	3
Psy./Soc. 473 — Social Science Research Methods.....	3
* Anth. 242 — Native Cultures of Alaska.....	3

3. Complete 21 credits from the following:\*\*

Psy. 210 — Cross-Cultural Psychology.....	3
Psy. 230 — Psychology of Adjustment.....	3
Psy. 304 — Personality.....	3
Psy. 330 — Social Psychology.....	3
Psy. 345 — Abnormal Psychology.....	3
Psy. 350 — Comparative Psychology.....	3
Psy. 355 — Foundations of Counseling I.....	3
Psy. 356 — Foundations of Counseling II.....	3
Psy. 370 — Drugs and Drug Dependence.....	3
Psy. 380 — Human Behavior in the Arctic.....	3
Psy. 440 — Learning.....	3
Psy. 445 — Community Psychology.....	3
Psy. 450 — Experimental Psychology.....	4
Psy. 460 — Physiological Psychology.....	4
Psy. 470 — Sensation and Perception.....	3
Minimum credits required for degree.....	120

\* May be used toward general degree requirements where applicable.

\*\* Courses in this group not used toward the major may be applied toward general degree requirements.

**MINOR in Psychology**

Complete 15 credits of psychology courses beyond Psy. 101.

**Public Safety — Fire Science****School of Career and Continuing Education  
Service Industry Department**

Certificate; Degree: A.A.S.

Minimum Requirements for Certificate — 30 credits; for Degree — 60-61 credits

The Fire Science Program gives students a fundamental working knowledge of the various aspects of fire prevention and protection in both urban and wildlife areas. It also serves as an in-service program for personnel already employed by fire protection agencies and enhances

their opportunities for advancement. Associate degrees and certificate programs in municipal fire control and wildlands fire control are offered.

**Requirements****Public Safety — Municipal Fire Control — A.A.S. Degree**

1. Complete the following general degree requirements:	Credits:
Written Communications.....	6
(Engl. 111 required)	
Oral Communications.....	3
Select a total of 6 credits from the following areas:	
Humanities or	
Social Science or	
Math or	
Natural Science.....	6
Subtotal.....	15

2. Complete the following major degree requirements:

FSCI 101 — Introduction to Fire Science.....	3
FSCI 105 — Fundamentals of Fire Protection.....	3
FSCI 107 — Fire Tactics and Strategy.....	3
FSCI 111 — Fire Company Organization and Management.....	3
FSCI 117 — Rescue Practices.....	3
FSCI 202 — Fire Hydraulics.....	3
FSCI 204 — Hazardous Materials.....	3
EMTT 103 — Emergency Trauma Training (ETT) First Responder.....	3
or	
EMTT 119 — Emergency Medical Technician I.....	4
Subtotal.....	24-25

3. Complete 6 credits from the following major specialty electives:

EMTT 102 — Emergency Medical Technician Refresher.....	1
EMTT 121 — Emergency Medical Technician II.....	2
FSCI 115 — Fire Apparatus and Equipment.....	3
FSCI 121 — Introduction to Fire Chemistry and Physics.....	3
FSCI 123 — Fire Investigation.....	3
FSCI 205 — Hazardous Materials II.....	3
FSCI 206 — Building Construction for Fire Protection.....	3
FSCI 208 — Fire Service Records and Reports.....	3
FSCI 212 — Related Codes and Ordinances.....	3
FSCI 214 — Fire Protection Equipment and Systems.....	3
Subtotal.....	6

4. Complete 15 general electives credits..... 15

Degree Total 60-61

Note: Major electives and general electives must be approved by the student's advisor.

**Public Safety — Municipal Fire Control — Certificate****Suggested Course Sequence**

	Credits
<i>Fall Semester</i>	
FSCI 101 — Introduction to Fire Science.....	3
FSCI 105 — Fundamentals of Fire Prevention.....	3
FSCI 107 — Fire Tactics and Strategy.....	3
EMTT 103 — Emergency Trauma Training (ETT) First Responder.....	3
or	
EMTT 119 — Emergency Medical Technician I.....	4
Major specialty electives.....	3
Subtotal.....	15-16

**Spring Semester**

FSCI 111 — Fire Company Organization and Management.....	3
FSCI 117 — Rescue Practices.....	3
FSCI 202 — Fire Hydraulics.....	3
FSCI 204 — Hazardous Materials I.....	3
Major specialty electives.....	2-3
Subtotal.....	14-15
Certificate Total	30

**Public Safety — Wildlands Fire Control — A.A.S. Degree**

1. Complete the following general degree requirements:	Credits:
Written Communications.....	6
(Engl. 111 required)	
Oral Communications.....	3
Select a total of 6 credits from the following areas:	
Humanities or	
Social Science or	
Math or	
Natural Science.....	6
Subtotal.....	15

2. Complete the following major degree requirements:

EMTT 103 — Emergency Trauma Training (ETT) First Responder or	
--	--

EMTT 119 — Emergency Medical Technician I.....	4
FSCI 151 — Wildland Fire Control I.....	3
FSCI 153 — Fire Organization and Management.....	3
FSCI 155 — Fire Behavior I.....	3
FSCI 157 — Air Operations Management.....	3
FSCI 252 — Enforcement and Investigation.....	3
FSCI 254 — Wildland Fire Business Management.....	3
FSCI 262 — Wildland Fire Control II.....	3
Subtotal.....	24-25

## 3. Complete 6 credits from the following major elective courses:

EMTT 102 — Emergency Medical Technician Refresher.....	1
EMTT 121 — Emergency Medical Technician II.....	2
FSCI 161 — Fire Logistics Functions.....	3
FSCI 163 — Wildland Air Attack.....	3
FSCI 256 — Fire Planning and Multiple Use Management.....	3
FSCI 258 — Prescribed Burning and Fuels Management.....	3
FSCI 266 — Wildland Fire Environmental Considerations.....	3
Subtotal.....	6

## 4. Complete 15 general electives credits.....15

Degree Total 60-61

Note: Major electives and general electives must be approved by the student's advisor.

**Public Safety — Wildlands Fire Control — Certificate****Suggested Course Sequence**

Fall Semester	Credits
EMTT 103 — Emergency Trauma Training (ETT) First Responder.....	3
or	
EMTT 119 — Emergency Medical Technician I.....	4
FSCI 151 — Wildfire Control I.....	3
FSCI 153 — Fire Organization and Management.....	3
FSCI 161 — Fire Logistics Functions.....	3
Major electives.....	3
Subtotal.....	14-15
Spring Semester	
FSCI 155 — Fire Behavior I.....	3
FSCI 157 — Air Operations Management.....	3
FSCI 252 — Enforcement and Investigation.....	3
FSCI 254 — Wildland Fire Business Management.....	3
Major electives.....	2-3
Certificate Total	30

**Public Safety — Justice****School of Career and Continuing Education  
Service Industry Department**

Degree: A.A.S.

Minimum Requirements for Degree: 60 credits

This degree program is presently suspended.

**Resource Economics****School of Management  
Department of Economics**

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. The program consists of core course work in micro- and macroeconomic theory, mathematical economics, econometric methods and courses in the economic theory and public policy of natural resources. Master's candidates will be required to write a thesis. Thesis topics, consistent with students' interest and project requirements, may be selected from current research projects of the department or from one of the several research institutes on campus. Most research projects deal with issues pertinent to the development and management of Alaska's renewable and nonrenewable resources.

**Requirements****Resource Economics — M.S. Degree**

## 1. Admission Requirements

a. Baccalaureate degree in appropriate undergraduate major.  
b. Unconditional acceptance requires completion of intermediate microeconomics and macroeconomics, basic statistics, and one semester of calculus. Students may be accepted into the program subject to identified deficiencies being rectified.

c. Scores of the general aptitude sections of the Graduate Record Examination.

2. Complete the general university requirements and master's degree requirements.

3. Complete a minimum of 30 credits of course work, including Econ 699 — Thesis, in the field of resource economics. At least 24 credits, including thesis, must be at 600 level.

## 4. Program Requirements:

**Required Courses:**

Required Courses:	Credits
Econ. 601 — Microeconomic Theory I.....	3
Econ. 603 — Macroeconomic Theory I.....	3
Econ. 623 — Mathematical Economics.....	3
Econ. 626 — Econometrics.....	3
Econ. 635 — Resource Economics I.....	3
Econ. 636 — Resource Economics II.....	3
Econ. 670 — Seminar in Research Methodology.....	0
Elective Courses.....	6
Approved by graduate committee.	
Econ. 699 — Thesis.....	6

**Emphasis in Mineral Economics:**

1. In addition to the requirements stated above, students pursuing an emphasis in Mineral Economics are expected to have completed the following coursework: introduction to mineral industry, mineral valuation, operations research, mining law, mining geology and at least one course in financial management.

2. Complete the general university requirements and master's degree requirements.

3. Complete a minimum of 33 credits of coursework, including Econ. 699 — Thesis, in the field of mineral economics. At least 27 credits, including thesis, must be at the 600-level.

## 4. Emphasis Requirements:

**Required Courses:**

Required Courses:	Credits
Econ. 601 — Microeconomic Theory.....	3
Econ. 603 — Macroeconomics Theory.....	3
Econ. 623* — Mathematical Economics.....	3
Econ. 626 — Econometrics or	
Min. 635 — Geostatistical Ore Reserve Estimation.....	3
Econ. 635 — Resource Economics I.....	3
Econ. 636 — Resource Economics II.....	3
Econ. 670 — Seminar in Research Methodology.....	0
Min. 621 — Advanced Mineral Economics.....	3
B.A. 680 — Seminar in Finance.....	3
Econ. 699 — Thesis.....	6
Approved Elective.....	3

\*Students who have successfully completed differential equations may substitute an approved elective for Econ. 623.

**Rural Development****Rural College****Department of Rural Development**

Degree: B.A.

Minimum Requirements for Degree: 120 Credits

The Department of Rural Development addresses rural/community issues and concerns through a variety of campus and field-delivered academic programs and services. A bachelor of arts in rural development, with a variety of emphasis areas, is the only degree option and it is available on the Bristol Bay, Chukchi, Fairbanks, Interior and Kuskokwim campuses.

**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:

Rural Development Core (30 credits):	Credits
R.D. 300 — Rural Development in a Global Perspective.....	3
R.D. 325 — Community Organization and Dev. Strategies.....	3
Ed. 338 — Education and Economic Development.....	3

R.D. 350 — Community Research and Planning.....	3
R.D. 400 — Rural Development Internship.....	3
R.D. 450 — Managing Community Development Projects.....	3
R.D. 475 — Senior Project.....	3
R.D. Elective.....	6
R.D. or Ed. Elective.....	3

\*The B.A. general degree requirements of 18 credits in any combination of courses at the 100 level or above in both humanities and social sciences, selected from at least three disciplines in each area, with a maximum of 9 credits from any one discipline must contain the following courses:

<b>Humanities:</b>	
Engl. 414 — Research Writing.....	3
<b>Social Sciences:</b>	
Anth. 242 — Native Cultures of Alaska.....	3
ANS 310 — Political Economy of ANCSA.....	3
Soc. 405 — Social Change.....	3
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 science, mathematics and logic, or natural science general requirements for the B.A. degree.)

#### Applied Land Management Emphasis

Designed for individuals interested in becoming involved in the management of village corporation lands.

A.L.R. 101 — Conservation of Natural Resources.....	3
A.L.R. 350 — Introduction to Forest Systems.....	3
A.L.R. 380 — Soils.....	3
A.L.R. 401 — Natural Resources Legislation.....	3
A.L.R. 430 — Land Use Planning.....	3
A.L.R. 450 — Forest Management.....	3
ANS 425 — Federal Indian Law and Alaska Natives.....	3
Biol. 104 — Natural History of Alaska.....	3
Biol. 271 — Principles of Ecology.....	4
B.A. 100 — Introduction to Data Processing and BASIC.....	3
Econ. 235 — Intro. to Natural Resource Economics.....	3
Geos. 101 and 101L — General Geology and Lab.....	4
Soc. 406 — Environmental Sociology.....	3
W.L.F. 302 — Fish and Wildlife Ecology and Management.....	2
W.L.F. 417 — Wildlife Management — Forest and Tundra.....	2
W.L.F. 419 — Waterfowl and Wetlands Ecology and Management.....	2
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.

Acct. 101 — Elementary Accounting I.....	3
Acct. 303 — Governmental Accounting.....	3
ANS 120 — Cultural Differences in Institutional Settings.....	3
ANS 425 — Federal Indian Law and Alaska Natives.....	3
ANS 475 — Alaska Native Social Change.....	3
Anth. 305 — Comparative Political and Legal Systems.....	3
B.A. 100 — Introduction to Data Processing and BASIC.....	3
B.A. 301 — Processes of Management.....	3
P.S. 101 — Intro. to American Government and Politics.....	3
P.S. 210 — Alaska Government and Politics.....	3
P.S. 212 — Introduction to Public Administration.....	3
Soc. 407 — Formal Organizations.....	3
Sp.C. 330 — Intercultural Communication.....	3
Sp.C. 335 — Organizational Communication.....	3
Approved electives.....	3 or more

#### Village Corporation Management Emphasis

Designed for individuals interested in becoming involved in the management of ANCSA village corporations and related community-based enterprises.

Acct. 101 — Elementary Accounting I.....	3
Acct. 102 — Elementary Accounting II.....	3
Anth. 306 — Economic Anthropology.....	3
ANS 415 — Comparative Economic Development Processes.....	3
ANS 425 — Federal Indian Law and Alaska Natives.....	3
ANS 475 — Alaska Native Social Change.....	3
B.A. 100 — Introduction to Data Processing and BASIC.....	3
B.A. 151 — Introduction to Business.....	3
B.A. 331 — The Legal Environment of Business.....	3
Econ. 111 — Economics of Rural Alaska (offered only through off-campus program).....	3
Econ. 137 — The Alaskan Economy.....	3
Sp.C. 330 — Intercultural Communication.....	3
Sp.C. 335 — Organizational Communication.....	3
Soc. 407 — Formal Organizations.....	3
Approved electives.....	6 or more

#### Community Research and Cultural Documentation

Designed for individuals interested in becoming involved in accessing, organizing and disseminating information at the community level, particularly through community information centers.

BA 100 — Intro. to Data Proc. & BASIC Lang.....	3
ANS 120 — Cultural Differences in Institutional Settings.....	3
LS 201 — Information Resources & Strategies.....	3
JB 204 — Basic Photojournalism.....	3
Soc. 250 — Intro. Statistics for Behavioral Sciences.....	3
ANS 301 — Native Cultural Heritage Documentation.....	3
Ed. 311 — Audio-Visual Methods and Materials.....	3
ANS 320 — Language & Culture: Application of Alaska.....	3
Sp.C. 330 — Intercultural Communication.....	3
SPC 335 — Organizational Communication.....	3
ANS 351 — Practicum in Native Cultural Expression.....	3
JB 372 — Methods of Instructional Broadcasting.....	3
ANS 401 — Knowledge of Native Elders.....	3
ANS 421 — Analytical Techniques.....	3
Soc. 473 — Social Science Research Methods.....	3
Approved Electives.....	3 or More

#### Community Organization and Service

Designed for individuals who are interested in becoming involved with community level service organizations and programs.

ANS 120 — Cultural Differences in Institutional Settings.....	3
ANS 425 — Federal Indian Law and Alaska Natives.....	3
BA 301 — Processes of Management.....	3
HMSV 201 — Introduction to Human Services.....	3
HMSV 350 — Foundations of Counseling.....	3
HMSV 410 — Management of Human Services Programs.....	3
Psy. 101 — Introduction to Psychology.....	3
Psy. 210 — Cross-Cultural Psychology.....	3
Psy. 240 — Developmental Psychology in Cultural Perspectives.....	3
Soc. 101 — Introduction to Sociology.....	3
Soc. 201 — Social Problems.....	3
Soc. 242 — The Family: A Cross-Cultural Perspective.....	3
Sp.C. 330 — Intercultural Communication.....	3
Approved electives.....	3 or more

Minimum credits required..... 120

## Russian Studies

### Interdisciplinary

Degree: B.A.

Minimum Requirements for Degree: 130 credits

### Requirements

#### Russian Studies — B.A. Degree

1. Complete general university requirements and B.A. degree requirements.
2. Complete the following program (major) requirements:

Core courses (21-24 credits):	Credits
Approved Anthropology Elective.....	3
Geog. 306 — Geography of the Soviet Union.....	3
Hist. 344 — Modern Russia.....	3
Russ. 301 — Advanced Russian <sup>*</sup> .....	3
Russ. 303 — Advanced Russian <sup>*</sup> .....	3
Russ. 432 — Studies in Russian Lit. and Culture (twice - 6 cr.) or	
Russ. 432 — Studies in Russian Lit. and Culture (once - 3 cr.) and	
Russ. 387 — Semantics (2 cr.) and	
Russ. 487 — Translation (2 cr.).....	6-7

Complete at least 12 credits from the following courses or alternatives as approved by the program advisor:

Geog. 405 — Political Geography.....	3
Hist. 315 — Europe 1900-1945.....	3
Phil. 471 — Contemporary Philosophical Prob.....	3
P.S. 202 — Comparative Politics: Contemporary Doctrines and Structures.....	3
P.S. 321 — International Politics.....	3
P.S. 322 — International Relations.....	3

3. 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. 301-303.

#### MINOR in Russian:



Two students walk to class past Wickersham Hall, the only all-female residence hall on campus. It is named after Judge James Wickersham, the first judge in the territory of Alaska. He was instrumental in founding the university.

A minor in Russian studies requires 15 credits taken from the core courses and approved by the program adviser.

## Science Management

### School of Engineering

#### Department of Engineering and Science Management

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.

The curriculum includes graduate-level core courses in the subjects named above, plus additional course work either directed toward special problems or in one of the more general fields of science 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 science.

Candidates for the science management degree must hold a degree in a natural or physical science.

## Requirements

### Science Management — M.S. Degree

1. Complete the general university requirements and master's degree requirements.

2. Complete the following degree and program (major) requirements:

a.	Nine credits, including	9
	1. ESM 601 — Engineers in Organizations	
	2. ESM 609 — Project Management	
	or	
	BA 643 — Marketing Management*	
	3. A third course chosen from	
	BA 643 — Marketing Management*	
	ESM 608 — Legal Principles for ESM	
	(with new description)	
	ESM 609 — Project Management	
	BA 661 — Human Resource Management*	
b.	Six credits, chosen from	6
	ESM 605 — Engineering Economy	
	Acct. 602 — Financial Accounting Concepts for Administrators*	
	BA 625 — Financial Management*	
	If a student has had a course in engineering economy, Acct. 602 and BA 625 may be taken; otherwise, ESM 605 and Acct. 602 are required.	
c.	Six credits, chosen from	6
	ESM 620 — Statistics for ESM	
	ESM 621 — Operations Research	
	BA 605 — Management Information Systems*	
d.	ESM 684 — Project: 3 credits	3
3.	Nine credits of electives in the student's technical specialty	9
	TOTAL	33

\*No more than twelve (12) credits may be taken in the School of Management.

In addition to completing the 33 credits indicated above, a candidate must demonstrate competence in computer programming by passing a programming course or a qualifying examination.

Substitutions for one or more of the courses listed above are permitted if similar courses are included in the student's previous academic background. No more than nine credits of appropriate graduate-level course work completed at other institutions with a grade of A or B may be transferred and applied toward the total 33 credits of required and elective courses. Both substitutions and transfer of credit must be approved by the department. At least 24 credits, including thesis or research, must be at the 600 level. (See also "Engineering Management.")

## Social Work

### Rural College

#### Department of Behavioral Sciences and Human Services

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 a social 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 curriculum includes a liberal arts base, foundation requirements in the behavioral sciences, and sequences in social policy and services, practice methods, and field instruction. One major emphasis in the major is preparation of the student for social programs that serve rural communities.

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. 103 or Biol. 111 must be taken to meet natural science requirement.)

2. Complete the following departmental core requirements:

*Psy. 101 — Introduction to Psychology	3
*Soc. 101 — Introduction to Sociology	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 I	6
SWK 463 — Social Work Practice II	3
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 — The Helping Role in Child Abuse and Neglect	3
SWK 484 — Seminar in Social Work Practice	3
HMSV 205 — Factors in Health and Disease	3
HMSV 210 — Crisis Intervention	3
HMSV 230 — Alcoholism: Theories of Etiology	3
HMSV 255 — Foundations of Counseling I	3
HMSV 330 — Alcoholism: Treatment and Prevention	3
HMSV 351 — Foundations of Counseling II	3
HMSV 410 — Management of Human Services Programs	3
R.D. 325 — Community Organization and Development Strategies	3
Soc. 310 — Sociology of Later Life	3
Minimum credits required for degree	120

\*May be used toward general degree requirements where applicable.

## Sociology

### Rural College

#### Department of Behavioral Sciences and Human Services

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.

2. Complete the following departmental core requirements:

*Psy. 101 — Introduction to Psychology .....	3
Soc. 101 — Introduction to Sociology .....	3
*Psy. 240 — Develop. Psychology in Cross-Cult. 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

3. 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

4. Complete 12 credits from the following:\*\*

Soc. 102 — Social Institutions.....	3
Soc. 201 — Social Problems .....	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. 405 — Social Change .....	3
Soc. 406 — Environmental Sociology .....	3
Soc. 407 — Formal Organizations .....	3
Soc. 408 — American Minority Groups.....	3
R.D. 325 — Community Org. & Devt. Strategies.....	3
Minimum Credits required for Degree .....	120

\*May be used toward general degree requirements where applicable.

\*\*Courses from this group not used toward the major may be applied toward 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

Degrees: M.S., Ph.D.

Minimum Requirements for Degrees: M.S. — 30 additional credits; Ph.D. — no fixed credits

## Requirements

### Space Physics — M.S. Degree

1. Complete the general university requirements and the master's degree requirements.

2. Complete a minimum of 30 credits of approved courses including:

	Credits
Basic courses in space physics.....	12
Approved physics courses (minimum).....	12

### Space Physics — Ph.D. Degree

1. Complete the general university requirements and Ph.D. requirements.

2. Complete required program as arranged by conference with the graduate committee and in accordance with the physics department manual of *Policies and Procedures* for students.

## Speech Communication

### College of Liberal Arts

#### Department of Speech and Drama

Degree: B.A.

Minimum Requirements for Degree: 130 credits

The Department of Speech and Drama provides formal course offerings in both Speech Communication and Theatre. Coursework in Speech Communication prepares an individual to handle the challenges of communicating effectively in a rapidly changing world. The

major and minor program in Speech Communication provide the student with a comprehensive background in the discipline in preparation for employment or further education. Individuals majoring in a wide variety of other disciplines will also find Speech Communication electives to be valuable additions to their programs.

## Requirements

### Speech Communication — B.A. Degree

1. Complete the general university degree requirements and B.A. degree requirements, including one of the following three courses for the Oral Communication requirement: Sp.C. 121, Sp.C. 131, or Sp.C. 141. The course completed to meet the University Oral Communication requirement may not be used to meet the requirements of the Speech Communication Major listed in section 2.

2. Complete a minimum of 30 credits in approved Speech Communication courses.

The courses must be distributed as follows:

100 level courses .....	3 credits
200 level courses .....	6 credits
300 level courses .....	12 credits
400 level courses .....	9 credits

### COURSES

#### 100 Level

Sp.C. 121 — Fundamentals of Oral Communication-Interpersonal Emphasis .....	3
Sp.C. 131 — Fundamentals of Oral Communication-Small Group Emphasis .....	3
Sp.C. 141 — Fundamentals of Oral Communication-Public Speaking Emphasis .....	3

#### 200 Level

Sp.C. 211 — Voice and Diction .....	3
Sp.C. 231 — Business and Professional Communication .....	3
Sp.C. 251 — Argumentation and Debate .....	3
Sp.C. 261 — Oral Interpretation .....	3
Sp.C. 282 — Communication Research Methods.....	3

#### 300 Level\*

Sp.C. 320 — Communication and Language .....	3
Sp.C. 321 — Nonverbal Communication.....	3
Sp.C. 322 — Interpersonal Communications .....	3
Sp.C. 330 — Intercultural Communication.....	3
Sp.C. 331 — Group Communication.....	3
Sp.C. 335 — Organizational Communication .....	3
Sp.C. 342 — Advanced Public Speaking .....	3

#### 400 Level\*

Sp.C. 425 — Communication Theory .....	3
Sp.C. 441 — Persuasion.....	3
Sp.C. 443 — Rhetorical Theory .....	3
Sp.C. 475 — Speech Communication in Education and Training .....	3
Sp.C. 482 — Seminar in Speech Communication.....	3

3. Minimum credits required..... 130

\*With approval of advisor, an appropriate level Speech Communication course (3 credits) may be used to meet this requirement.

### MINOR in Speech Communication:

A minor in Speech Communication requires the completion of 15 credits in Speech Communication courses beyond the courses taken to satisfy the university oral communication requirement. At least 6 of the credits must be at the 300 level or higher. A minor program requires the approval of the Speech Communication faculty in advance of declaring the minor, preferably no later than the first semester of the student's junior year.

## Statistics

### College of Liberal Arts

#### Department of Mathematical Sciences

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

1. Complete the general university requirements and B.S. degree requirements.\*
2. Complete the following program (major) requirements:

<b>A. Statistics Core</b>	<b>44 Credits</b>
Math. 200, 201, 202 — Calculus .....	12
Math. 210 — Calculus and the Computer .....	1
Math. 211 — Linear Algebra and the Computer .....	1
Math. 314 — Linear Algebra .....	3
Math. 371 — Probability .....	3
Math. 408 — Mathematical Statistics .....	3
C.S. 201 — Computer Programming .....	3
Stat. 301 — Elementary Probability and Statistics .....	3
Stat. 351 — Statistical Computing Packages .....	2
Stat. 401 — Analysis of Experimental Design and Regression .....	4
Stat. 498 — Senior Project .....	3

Choose two of the following:	<b>6 Credits</b>
Stat. 431 — Applied Nonparametric Statistics .....	3
Stat. 461 — Applied Multivariate Statistics .....	3
Math. 460 — Mathematical Modeling .....	3
Stat. 402 — Scientific Sampling .....	3
Stat., Math. or statistical discipline oriented course approved by the statistics program chairperson .....	3

### Area of Application

A minimum of 24 credits, including 6 upper division, in a single discipline in which a UAF undergraduate degree is offered (excluding mathematics). Joint approval in writing is required from the department head in the area of application and the statistics adviser.\*\*

3. Minimum credits required..... 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. Engl. 312 must be completed as the second course in the written communication requirement.

\*\*Examples of programs for areas of application for biology, wildlife, geology and economics are available. Other areas of application are available.

### Minor in Statistics:

Complete the following:	
Stat. 301 — Elementary Probability and Statistics .....	3
Stat. 401 — Experimental Design and Regression .....	3
Math. 371* — Probability .....	3
Math. 408 — Mathematical Statistics .....	3
Approved credits .....	3

(Examples: Any other Stat. course; statistics related courses such as B.A. 360, B.A. 684, Geos. 430, Econ. 326, Anth. 421, etc.)

\*Math. 371 requires Math. 200-201-202 as prerequisites.

(A minor in statistics may be used with a major in mathematics as long as there is no double-counting of courses in both the major and minor.)

## Theater

### College of Liberal Arts Department of Speech and Drama

Degree: B.A.

Minimum Requirements for Degree: 130 credits

The Department of Speech and Drama provides formal course offerings in both Speech Communication and Theater. 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. Complete a minimum of 45 credits in theater and stipulated related courses as specified below, including the following foundation courses:

	<i>Credits</i>
Thr. 211 — Introduction to the Theater .....	3
Thr. 221 — Acting I .....	3
Thr. 241 — Basic Stagecraft .....	3
Thr. 331 — Directing .....	3
Thr. 354 — Costume Construction and Design .....	3
Thr. 411 — Theater History I or	
Thr. 412 — Theater History II .....	3

### B. Complete the following:

1. A minimum of two courses from: .....	6
Thr. 225 — Movement for the Actor	
Thr. 321 — Acting II	
Thr. 325 — Theatre Speech	
Thr. 351 — Makeup for Theater	
Thr. 421 — Period Styles of Acting	

2. A minimum of two courses from: .....	6
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Thr. 341 — Intermediate Stagecraft	
Thr. 343 — Scene Design	
Thr. 347 — Lighting Design	
Thr. 355 — History of Stage Costume	

*3. A minimum of two courses from: .....	6
--	---

Engl. 422 — Shakespeare: History Plays and Tragedies	
Engl. 425 — Shakespeare: Comedies and Non-Dramatic Poetry	
Engl. 445 — 20th Century Drama: Chekhov to Ionesco	

*4. A minimum of one course from: .....	3
---	---

Art 261 — History of World Art	
Art 262 — History of World Art	
Mus. 123 — Experiencing Music	
Mus. 124 — Music in World Cultures	

*5. A minimum of one course from: .....	2-3
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Art 105 or 106 — Beginning Drawing	
J-B 215 — Audio Production	
J-B 316 — Television Production	

E.S. 101 — Graphics (2 cr.)	
PER. 100 — Modern Dance, Fencing, Gymnastics (1 cr. each)	

Sp.C. 261 — Oral Interpretation	
Sp.C. 211 — Voice and Diction	

F.L. 110 — Pronunciation of French, German, Italian and Spanish	
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6. A minimum of one course from: .....	3
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An additional course from 1,2,3, or 4 above

A second semester of Theater History (411 or 412, which ever was not taken to meet the requirement in A, above)

Thr. 435 — Directing	
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An individual study in theater

7. Minimum credits required .....	130
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\*May be used to meet general degree requirements where applicable.

### MINOR in Theater:

A minor in Theater requires 18 credits in theater courses including the following:

Thr. 211 — Introduction to the Theater	
--	--

Thr. 221 — Acting I	
---------------------	--

Thr. 241 — Basic Stagecraft	
-----------------------------	--

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.

## Wildlife Management

### College of Natural Sciences

#### Department of Biology and Wildlife

Degrees: B.S., M.S., Ph.D. (interdisciplinary)

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. Two options are available: a wildlife research biologist option and a wildlife management biologist option. The research biologist option is designed for those students whose objective is to undertake the field and laboratory research needed to provide additional information on the workings of wild animal populations, the condition of their habitat, and habitat-animal relationships. The management biologist option is designed for those students whose primary interests involve the interpretation, application, or dissemination of research findings, rather than their acquisition. That option 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 curricula in both options provide a solid foundation for graduate study.

The geographic location of the university is particularly advantageous for the study of wildlife management. 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 the arctic coast.

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 personnel of the Alaska Cooperative Wildlife Research Unit, the Alaska Cooperative Fishery Research Unit and several local offices of the federal and state conservation agencies. These agencies usually hire a number of students for summer field work. Thus, an unusually good opportunity is available for students to gain experience and to make job connections.

## Requirements

### Wildlife Management — B.S. Degree

(Research Biologist Option)

1. Complete the general university requirements.
2. Complete the following degree and program (major) requirements:

Courses	Credits
A.L.R. 101 — Conservation of Natural Resources.....	3
A.L.R. 380 — Soils.....	3
A.L.R. 400 — Natural Resource Policies or A.L.R. 401 — Natural Resource Legislation.....	3
Stat. 301 — Elementary Probability and Statistics.....	3
Stat. 402 — Scientific Sampling.....	3
Biol. 105-106 — Fundamentals of Biology.....	8
Biol. 205 — Vertebrate Anatomy or Biol. 317 — Comp. Anatomy.....	3-4
*Biol. 210 — Animal Physiology.....	4
*Bot. 239 — Plant Form and Function.....	4
Biol. 271 — Principles of Ecology.....	4
Bot. 331 — Systematic Botany.....	4
Biol. 425 — Mammalogy.....	3
Biol. 426 — Ornithology.....	3
Biol. 471 — Population Ecology.....	3
Chem. 105-106 — General Chemistry.....	8
Engl. 111 — Methods of Written Communication.....	3
Engl. 213 — Intermediate Exposition.....	3
Engl. 314 — Technical Writing or Engl. 414 — Research Writing.....	3
Math. 272-273 — Introduction to Calculus for the Life Sciences.....	6
Phys. 103 — College Physics.....	4
Sp.C. 141 — Fund of Oral Comm: Public Speaking.....	3
W.L.F. 201 — Wildlife Management Principles.....	2
W.L.F. 303 — Wildlife Management Techniques.....	3
W.L.F. 360 — Nutrition and Physiol Ecology of Wildlife.....	3
W.L.F. 410 — Wildlife Populations and Their Management.....	3
Biol. 473 — Limnology.....	3

W.L.F. 420 — Wildlife Policy and Administration.....	3
C.S. 201 — Computer Programming.....	3

Take at least 2 of the following:

W.L.F. 305 — Concepts of Animal/Wildlife Diseases.....	3
W.L.F. 417 — Wildlife Management: Forest and Tundra.....	2
W.L.F. 419 — Waterfowl and Wetlands Ecology and Management.....	3
Biol. 472 — Communities and Ecosystems.....	2

Total 103-106

In addition:

1. Complete the remainder of the B.S. social sciences/humanities requirement, 9 credits.
2. Complete sufficient electives to bring total to 130 credits.
3. 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.

\*Note prerequisite.

### Wildlife Management — B.S. Degree (Management Biologist Option)

1. Complete the general university requirements.
2. Complete the following degree and program (major) requirements:

Courses	Credits
A.L.R. 101 — Conservation of Natural Resources.....	3
A.L.R. 380 — Soils.....	3
A.L.R. 400 — Natural Resource Policies or A.L.R. 401 — Natural Resource Legislation.....	3
A.L.R. 430 — Land-Use Planning.....	3
Stat. 301 — Elementary Probability and Statistics.....	3
Stat. 402 — Scientific Sampling.....	3
Biol. 105-106 — Fundamentals of Biology.....	8
Biol. 205 — Vertebrate Anatomy.....	3
*Biol. 210 — Animal Physiology.....	4
*Bot. 239 — Plant Form and Function.....	4
Biol. 271 — Principles of Ecology.....	4
Bot. 331 — Systematic Botany.....	4
Biol. 425 — Mammalogy or Biol. 426 — Ornithology.....	3
Biol. 471 — Population Ecology.....	3
Chem. 105-106 — General Chemistry.....	8
Econ. 235 — Introduction to Natural Resource Economics.....	3
Engl. 111 — Methods of Written Communication.....	3
Engl. 213 — Intermediate Exposition.....	3
Engl. 314 — Technical Writing or Engl. 414 — Research Writing.....	3
Math. 272-273 — Introduction to Calculus for the Life Sciences.....	6
Phys. 103 — College Physics.....	4
Sp.C. 141 — Fund of Oral Comm: Public Speaking.....	3
W.L.F. 201 — Wildlife Management Principles.....	2
W.L.F. 410 — Wildlife Populations and Their Management.....	3
W.L.F. 303 — Wildlife Management Techniques.....	3
Biol. 473 — Limnology.....	3
Total	105

In addition:

1. At least 9 credits must be completed from this group:
  - Geog. 302 — Geography of Alaska..... 3
  - Geog. 402 — Man and Nature..... 3
  - \*\*J-B 102 — Broadcasting and Society..... 3
  - \*\*J-B 301 — Basic Newsgathering and Processing..... 3
  - \*\*J-B 203 — Basic Photography..... 3
  - J-B 311 — Magazine Article Writing..... 3

\*Note prerequisite.

\*\*Maximum of 3 credits may be included in the required 9.

Phil. 322 — Ethics.....	3
P.S. 101 — Introduction to American Government.....	3
P.S. 201 — Comp. Politics: Methods of Political Analysis.....	3
P.S. 263 — Alaska Native Politics.....	3
P.S. 301 — Public Admin. in Political Process.....	3
Psy. 101 — Introduction to Psychology.....	3
Soc. 101 — Introduction to Sociology.....	3
Soc. 102 — Introduction to Sociology.....	3
Soc. 309 — Urban Sociology.....	3

2. At least 1 of the following courses must be included:

A.L.R. 460 — Principles Outdoor Recreation Management.....	3
A.L.R. 450 — Forest Management.....	3
A.L.R. 370 — Introduction to Watershed Science.....	3

3. At least 2 of the following courses must be included:

W.L.F. 417 — Wildlife Management — Forest and Tundra .....	2
W.L.F. 419 — Waterfowl and Wetlands Ecology and Management.....	3
Fish. 429 — Introduction to Fisheries Science .....	3
Fish. 430 — Fisheries Management .....	3
W.L.F. 436 — Introduction to Aquaculture.....	3
W.L.F. 305 — Concepts of Animal/Wildlife Disease .....	3
Biol. 472 — Communities and Ecosystems .....	3

4. Complete sufficient electives to bring total credits to 130.

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 wildlife and fisheries program and the Alaska Cooperative Wildlife Research Unit cooperate in offering graduate work leading to the master of science degree. An interdisciplinary doctor of philosophy degree can also be offered. Persons desiring detailed information on the graduate program in wildlife management may obtain this from the head, wildlife and fisheries 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 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 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.

#### **Wildlife Management — M.S. Degree**

1. Complete the general university requirements and master's degree requirements.

2. Complete a minimum of 30 credits of approved courses, including W.F. 699 — Thesis, in the field of wildlife management. At least 24 credits, including thesis and/or research, must be at the 600 level.

3. Students working in subject areas involving significant non-English literature will be expected to read the appropriate foreign language.

#### **Wildlife Management — Interdisciplinary Ph.D. Degree**

See Ph.D. general degree requirements.

## Zoology

### *College of Natural Sciences*

#### *Department of Biology and Wildlife*

Degrees: M.S., Ph.D. (Interdisciplinary)

Minimum Requirements for Degrees: M.S. — 30 additional credits

### Requirements

#### **Zoology — M.S. Degree**

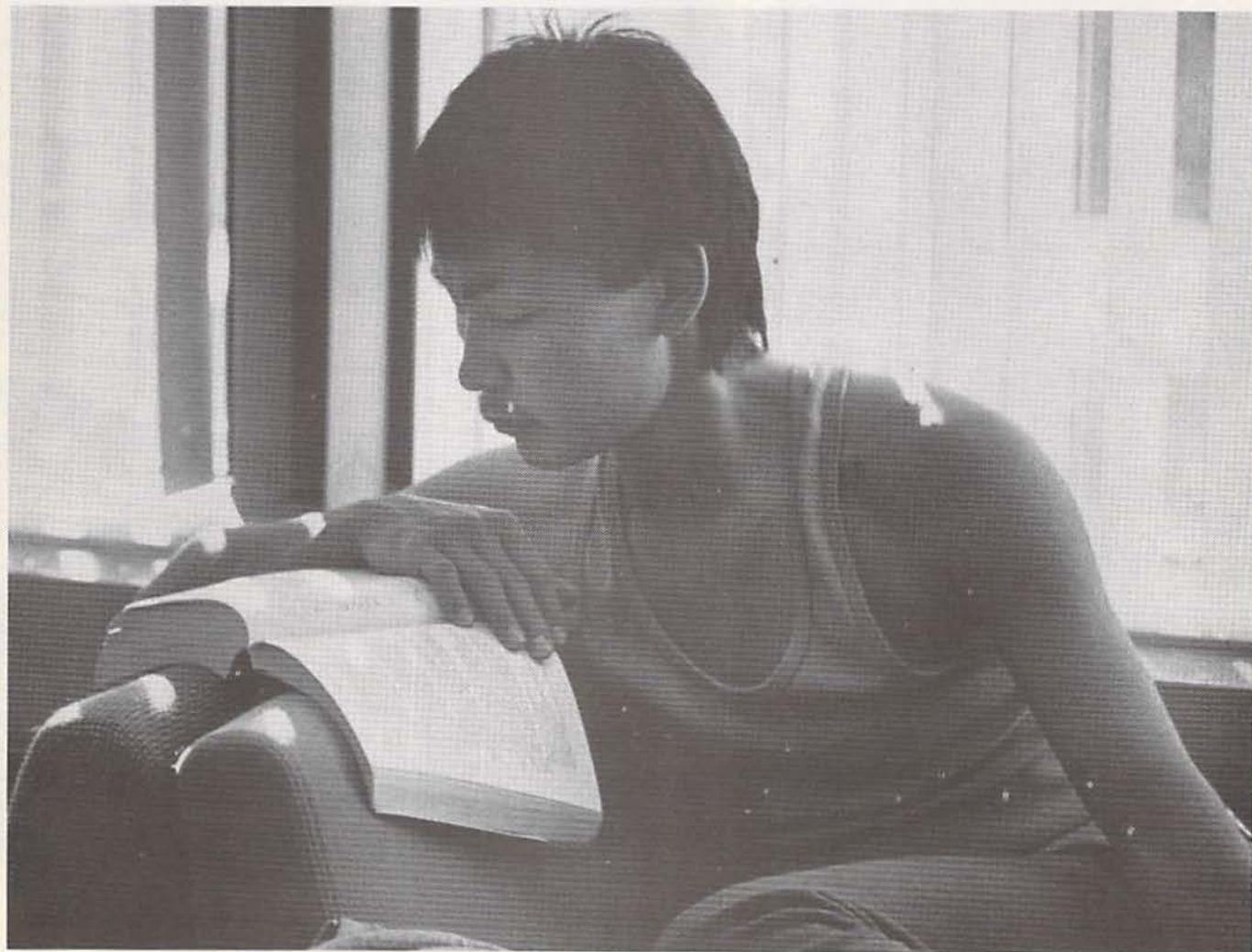
1. Complete the general university requirements and master's degree requirements.

2. Complete a minimum of 30 credits of approved courses. At least 24 credits, including thesis and research, must be at the 600 level.

3. Students working in subject areas involving significant non-English literature may be expected to read the appropriate foreign language.

#### **Zoology — Ph.D. Degree**

See Ph.D. general degree requirements. Additional requirements will be determined in consultation with graduate advisory committee.



Larry Kairaiuak, a junior in education from Chefornak, relaxes in one of the study areas in the library.



Dr. Suzanne Summerville, professor of music, directs the choral society choir. The campus and its faculty, staff and students join with the Fairbanks community to support a wide variety of arts organizations.

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<b>Bedford, Jimmy</b> , Professor of Journalism, Emeritus, University of Missouri '50, A.M.; '51, B.J.; '52, M.A. (1965-1981)
<b>Behlke, Charles M.</b> , Dean, School of Engineering, Professor of Civil Engineering, Emeritus, Washington State University '48 B.S.; '50, M.S. Stanford University '57, Ph.D.; P.E. (1950-1954, 1965-1980)
<b>Beistline, Earl H.</b> , Dean, School of Mineral Industry, Professor of Mining, Emeritus, University of Alaska '39, B.Min. Engr.; '47, E.M.; '69, LL.D. (Hon.); P.E. (1946-1982)
<b>Belon, Albert E.</b> , Professor of Physics, Emeritus, University of Alaska '52, B.S.; University of California, Los Angeles '54, M.A.; University of Alaska '84, D. Sc. (Hon.) (1956-1983)
<b>Benson, Carl S.</b> , Professor of Geophysics and Geology, Emeritus, University of Minnesota '50, B.A.; '56, M.S.; California Institute of Technology '60, Ph.D. (1960-1987)
<b>Bernet, John William</b> , Professor of English, Emeritus, State University of Iowa '51, B.A.; University of North Dakota '57, M.A.; Stanford University '69, M.A.; '69, Ph.D. (1959-1961; 1970-1988)
<b>Brundage, Arthur L.</b> , Professor of Animal Science, Emeritus, Cornell University '50, B.S.; University of Minnesota '52, M.S.; '55, Ph.D. (1968-1985)
<b>Burdick, John L.</b> , Professor of Civil Engineering, Emeritus, Rensselaer Polytechnic Institute '47, B.S.C.E.; Massachusetts Institute of Technology '48, S.M.; P.E.; L.S. (1960-1983)
<b>Carlson, Axel R.</b> , Professor of Extension, Emeritus, Michigan State University '53, B.S.; Pennsylvania State University '66, M.S. (1965-1980)
<b>Cashen, William R.</b> , Professor of Mathematics and Marshal of the University, Emeritus, University of Alaska '37, B.S.; University of Washington '48, M.A. (1942-1974) Deceased
<b>Clark, Bettie H.</b> , Head, Alumni Services and Career Planning and Placement, Emeritus, University of Alaska '35, B.S. (1962-1972)

<b>Clark, Vena A.</b> , Associate Professor of Home Economics, Emeritus, Cotner College '25, A.B.; Iowa State University '33, M.S. (1953-1967)
<b>Clutts, Joan B.</b> , Professor of Education, Emeritus, Colorado College '51, B.A.; University of Missouri '85, M.Ed.; '69, Ed.D. (1961-1984)
<b>Cook, Donald</b> , Professor of Mineral Beneficiation, Emeritus, University of Alaska '47, B.S.; '52, E.M.; Pennsylvania State University '58, M.S.; '60, Ph.D.; P.E. (1957-1979)
<b>Cutler, Howard A.</b> , Chancellor and Regents' Professor of Economics, Emeritus, State University of Iowa '40, B.A.; '41, M.A.; Columbia University '51, Ph.D. (1962-1966, 1975-1983)
<b>Dafoe, Don M.</b> , Executive Vice President, Emeritus, Valley City State College '37, B.A.; University of Idaho '48, M.S.; Stanford University '61, Ed.D. (1966-1976)
<b>Darnell, Frank</b> , Professor of Education, Emeritus, Colorado State University '51, B.S.; University of Alaska '62, M.Ed.; Wayne State University '70, Ed.D. (1966-1978)
<b>Davis, Charles W.</b> , Professor of Music, Emeritus, State University of Iowa '37, B.A.; '48, M.A. (1963-1979)
<b>Davis, T. Neil</b> , Professor of Geophysics, Emeritus, University of Alaska '55, B.S.; California Institute of Technology '57, M.S.; University of Alaska '61, Ph.D. (1953-1982)
<b>Dinkel, Don H.</b> , Professor of Plant Physiology, Emeritus, University of Minnesota '54, B.S.; '60, Ph.D. (1960-1966, 1968-1983)
<b>Deehr, Charles Sterling</b> , Professor of Physics, Emeritus, Reed College '58, B.A.; University of Alaska '61, M.S.; '68, Ph.D. (1958-1988)
<b>Elsner, Robert</b> , Professor of Marine Science, Emeritus, New York University '50, B.A.; University of Washington '55, M.S.; '59, Ph.D. (1973-1988)
<b>Epps, Alan C.</b> , Professor of Natural Resources, Emeritus, Montana State University '66, B.S.; '69, M.S. (1969-1988)
<b>Fink, Milton A.</b> , Professor of Accounting, Emeritus, University of Nebraska '58, B.S.; University of Denver '66, M.S.B.A.; Colorado '66, C.P.A., Alaska '69, C.P.A. (1968-1988)
<b>Fohn-Hansen, Lydia</b> , Associate Director of Cooperative Extension, Emeritus, Iowa State College '19, B.S.; '22, M.S.; University of Alaska '59, D.Hum. (1925-1936, 1940-1959)
<b>Forbes, Robert B.</b> , Professor of Geology, Emeritus, University of Washington '50, B.S.; '59, Ph.D. (1959-1977)
<b>Gilmore, John C.</b> , Professor of Physical Education, Emeritus, Stanford University '54, B.A.; '58, M.A.; '67, Ed.D. (1968-1984)
<b>Gordon, Bruce R.</b> , Professor of French and Spanish, Emeritus, Brown University '37, A.B.; New York State College for Teachers '42, M.A.; Syracuse University '50, Ph.D. (1963-1977)
<b>Griese, Arnold</b> , Professor of Education, Emeritus, Georgetown University '48, B.A.; University of Miami '57, M.Ed.; University of Arizona '60, Ph.D. (1960-1980)
<b>Harbo, Samuel J.</b> , Professor of Wildlife Management and Biometrics, Emeritus, University of Nebraska '51, B.S.; University of Alaska '58, M.S.; North Carolina State University, Raleigh '72, Ph.D.
<b>Head, Thomas J.</b> , Professor of Mathematics and Computer Science, Emeritus, University of Oklahoma '54, B.S.; '55, M.A.; University of Kansas '62, Ph.D. (1965-1988)
<b>Hessler, Victor P.</b> , Professor of Geophysics, Emeritus, Oregon State University '26, B.S.; Iowa State University '27, M.S.; '34, Ph.D. (1955-1968)
<b>Hollerbach, Wolf</b> , Professor of French and Spanish, Emeritus, Université de Rennes '61, Doctorat d'Université, University of Bonn '62, Wissenschaftliches Staatsexamen. (1965-1988)
<b>Hood, Donald W.</b> , Professor of Marine Science, Emeritus, Pennsylvania State University '40, B.S.; Oklahoma State University '42, M.S.; Texas A&M University '50, Ph.D. (1965-1978)
<b>Hunsucker, Robert</b> , Professor of Electrical Engineering, Emeritus and Professor of Physics, Emeritus, Oregon State University '54, B.S.; '58, M.S.; University of Colorado '69, Ph.D. (1971-198)
<b>Hunt, William</b> , Professor of History, Emeritus, Seattle University '51, B.S.S.; University of Washington '58, J.D.; '66, M.A.; '67, Ph.D. (1967-1979)
<b>Irving, Laurence</b> , Professor of Zoophysiology, Emeritus, Bowdoin College '16, A.B.; '59, D.Sc. (Hon.); Harvard University '17, A.M.; Stanford University '24,

Ph.D.; University of Oslo '56, M.D. (Hon.); University of Alaska '68, D.Sc. (Hon.) (1962-1975) Deceased

**Jones, Laura**, Director of Admissions and Registrar, Emeritus. University of Denver '41, B.A. (1956-1971) Deceased.

**Keim, Charles J.**, Professor of Journalism and English, Emeritus. University of Washington '48, B.A.; '50, M.A. (1954-1977)

**Keller, William K.**, Professor of Education, Emeritus. State College of Washington '21, A.B. and M.A.; '41, Ed.D.; University of Alaska '61, LL.D. (1952-1961) Deceased

**Klebesadel, Leslie J.**, Professor of Agronomy, Emeritus. University of Wisconsin '55, B.S.; '56, M.S.; '58, Ph.D. (1957-1988)

**Leekley, James R.**, Senior Scientist in Charge, Petersburg Fur Farm, Emeritus. Oregon State University '38, B.S. (1941-1972)

**Logsdon, Charles E.**, Professor of Plant Pathology, Emeritus. University of Kansas City '42, B.A.; University of Minnesota '54, Ph.D. (1953-1978)

**Mark Anthony, Leo**, Professor of Mining Extension, Emeritus. University of Alaska '52, B.S. (1952-1987)

**Mather, Keith B.**, Director of the Geophysical Institute, Emeritus and Professor of Physics, Emeritus. Adelaide University '42, B.Sc.; '44, M.Sc.; University of Alaska '68 (Hon.) D.Sc.

**Matthews, James W.**, Professor of Extension, Emeritus. North Dakota State University '52, B.S.; University of Wisconsin '61, M.S.; '70, Ph.D. (1957-1987)

**Mendenhall, William W.**, Professor of Civil Engineering, Emeritus. Cornell University '49, B.C.E.; '60, M.S.; P.E.; L.S. (1955-1987)

**Merritt, Robert P.**, Professor of Electrical Engineering, Emeritus. Oregon State College '49, B.S.; Stanford University '68, M.S.; P.E. (1955-1966; 1968-1987)

**Milan, Frederick A.**, Professor of Human Ecology and Anthropology, Emeritus. University of Alaska '52, B.A.; University of Wisconsin '59, M.S.; '62, Ph.D. (1971-1987)

**Miller, Orlando W.**, Professor of History, Emeritus. Muhlenberg College '47, B.A.; Columbia University '48, M.A.; '66, Ph.D. (1957-1978)

**Mitchell, William W.**, Professor of Agronomy, Emeritus. University of Montana '57, B.A.; '58, M.A.; Iowa State University '62, Ph.D. (1963-1988)

**Moore, Terris**, President Emeritus and Professor of the University. Williams College '29, A.B.; Harvard '33, M.B.A.; '37, D.C.S.; University of Alaska '67, LL.D.; (President 1949-1953, Prof. 1953-1972)

**Morrison, Peter R.**, Professor of Zoophysiology, Emeritus. Swarthmore College '40, A.B.; Harvard University '47, Ph.D. (1963-1974)

**Morrow, James E.**, Professor of Zoology, Emeritus. Middlebury College '40, A.B.; '42, M.S.; Yale University '44, M.S.; '49, Ph.D. (1960-1977)

**Neiland, Bonita J.**, Professor of Land Resources and Botany, Emeritus. University of Oregon '49, B.S.; Oregon State College '51, M.A.; University of Wisconsin '54, Ph.D. (1961-1988)

**Novatney, Dorothy H.**, Professor of English, Emeritus. Pomona College '28, B.A.; Claremont College '30, M.A.; Teachers College '38, Ed.D. (1943-1945, 1956-1963)

**Ohtake, Takeshi**, Professor of Physics, Emeritus. Tohoku University '52, B.Sc.; '61, D.Sc. (1964-1988)

**Orvik, James M.**, Professor of Psychology, Emeritus. San Diego State College '63, B.A.; '65, M.S.; Colorado University '70, Ph.D. (1969-1988)

**Parthasarathy, Raghavaiyengar**, Professor of Physics, Emeritus. Annamalai University '50, B.S.; '52, M.S. (1958-1980)

**Rae, Kenneth M.**, Vice President for Research and Professor of Marine Science, Emeritus. University College, London '35, B.Sc.; '58, Ph.D. (1961-1976)

**Renner, Louis L.**, Professor of German, Emeritus. Gonzaga University '50, A.B.; '51, M.A.; University of Santa Clara '58, M.S.T.; University of Munich '65, Ph.D. (1965-1980)

**Restad, Sigmund H.**, Assistant Director, Emeritus, Alaska Agricultural and Forestry Experiment Station. University of Minnesota '53, B.S.; '54, M.S. (1958-1962; 1968-1987)

**Rice, Elbert F.**, Professor of Civil Engineering, Emeritus. University of Idaho '48, B.S.; Oregon State College '49, M.S.; '55, Ph.D., P.E. (1952-1982) Deceased

**Roberts, Thomas D.**, Professor of Electrical Engineering, Emeritus and Director of the Institute of Northern Engineering, Emeritus. University of Alabama '59, B.S.; Oregon State University '65, Ph.D., P.E. (1966-1987)

**Rogers, George W.**, Professor of Economics, Emeritus. University of California, Berkeley '42, B.A.; '43, M.A.; Harvard University '50, Ph.D. (1960-1983)

**Romick, Gerald J.**, Professor of Geophysics, Emeritus. University of Alaska '52, B.S.; University of California, Los Angeles '54, M.S.; University of Alaska '64, Ph.D. (1951-1984)

**Rowinski, L. J.**, Director of University of Alaska Museum, Emeritus. Cornell University '51, B.S.; University of Alaska '58, M.S. (1957-1980)

**Ryberg, H. Theodore**, Director of Libraries, Emeritus. Gettysburg College '55, A.B.; Western Reserve University '57, M.S. (1962-1980)

**Salisbury, Lee H.**, Professor of Speech and Drama, Emeritus. New York University '49, B.S.; Columbia University '50, M.A. (1952-1988)

**Sargent, Charles**, Dean, College of Mathematics, Physical Sciences and Engineering, Emeritus. University of Idaho '48, B.S.C.E.; Stanford University '58, M.S. (Professor 1953-1961, Dean 1961-1967)

**Senungetuk, Ronald W.**, Professor of Art, Emeritus. Rochester Institute of Technology '60, A.A.S. and B.F.A.; Statens Handvaerks og Kunstindustriskole, Oslo, Norway '61, Diploma. (1961-1987)

**Sheridan, J. Roger**, Professor of Physics, Emeritus. Reed College '55, B.A.; University of Washington '64, Ph.D. (1964-1987)

**Sivjee, Abas**, Professor of Physics, Emeritus. University of London '63, B.S.; Johns Hopkins University '70, Ph.D. (1972-1988)

**Slotnick, Herman E.**, Professor of History, Emeritus. University of Idaho '39, B.A.; University of Washington '58, Ph.D. (1955-1978)

**Smith, R. London**, Professor of Political Science, Emeritus. College of St. Joseph '54, B.A.; University of Oklahoma '55, M.A.; American University '64, Ph.D. (1965-1984)

**Stetson, Marguerite**, Professor of Extension, Emeritus. Oregon State University '57, B.S.; University of Alaska '72, M.A.T. (1974-1987)

**Sunnell, Agnes S.**, Associate Professor of Extension, Emeritus. University of Washington '31, B.S.; Washington State University '44, M.S. (1960-1970)

**Swartz, L. Gerard**, Professor of Biological Sciences, Emeritus. University of Illinois '53, B.S.; '54, M.S.; '58, Ph.D. (1958-1988)

**Taylor, Roscoe L.**, Professor of Agronomy, Emeritus. South Dakota State University '48, B.S.; Iowa State University '51, M.S. (1951-1988)

**Tiedemann, James B.**, Professor of Mechanical Engineering Emeritus. University of Wisconsin '45, B.S.; '49, M.S.; '55, Ph.D.; P.E.

**Tilly, Lola Cremeans**, Professor of Home Economics, Emeritus. University of Illinois '20, A.B.; '21 M.S.; University of Alaska '63, D.Hum. (1929-1937, 1942-1963)

**Van Veldhuizen, Philip**, Professor of Mathematics, Emeritus. Central College '52, B.A.; State University of Iowa '60, M.S. (1963-1988)

**Wells, Minnie**, Professor of English, Emeritus. University of Missouri '25, B.S.; New York University '38, Ph.D. (1945-1971)

**Wilson, Charles R.**, Professor of Physics, Emeritus. Case Institute of Technology '51, B.S.; University of New Mexico '56, M.S.; University of Alaska '63, Ph.D.

**Wilson, William S.**, Head, Department of General Science, and Professor of Chemistry and General Science, Emeritus. Brown University '31, B.Sc.; '34, M.Sc.; Yale University '36, Ph.D. (1947-1972) Deceased

**Wood, William R.**, President Emeritus. Illinois College '27, A.B.; '60, LL.D. (Hon.); University of Iowa '36, M.A.; '39, Ph.D. (1960-1973)

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Agricultural and Forestry Experiment Station, James V. Drew, Director  
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Fishery Industry Technology Center, Jong S. Lee, Director  
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School of Mineral Engineering, Donald Cook, Dean  
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Petroleum Development Laboratory, G.D. Sharma, Director

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Institute of Arctic Biology, Francis S.L. Williamson, Director  
Institute of Marine Science, Vera Alexander, Director

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Faculty Senate, David Smith, 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:

AFES	Agricultural and Forestry Experiment Station
ATHREC	Athletics and Recreation
CC	Chukchi Campus
CLA	College of Liberal Arts
CNS	College of Natural Sciences
CES	Cooperative Extension Service
FITC	Fishery Industrial Technology Center
GI	Geophysical Institute
IAB	Institute of Arctic Biology
IMS	Institute of Marine Science
INE	Institute of Northern Engineering
JCFOS	Juneau Center for Fisheries and Ocean Sciences
KUC	Kuskokwim Campus
LIB	Elmer Rasmuson Library
MAP	Marine Advisory Program
NWC	Northwest Campus
RC	Rural College
RCTR	Rural Centers
SALRM	School of Agriculture and Land Resources Management
SCCE	School of Career and Continuing Education
SENG	School of Engineering
SFOS	School of Fisheries and Ocean Sciences
SG	Alaska Sea Grant College Program
SME	School of Mineral Engineering
SOM	School of Management
STUAFF	Student Affairs
UAM	University of Alaska Museum
VCA	Vice Chancellor for Administration
VCAA	Vice Chancellor for Academic Affairs
VCR	Vice Chancellor for Research

**Abrahams, Sherry Lynn** — 1964 — Associate Professor of Library Science (1975). LIB. Bowling Green State University '58, B.A.; University of Illinois '59, M.S.L.S.

**Adams, John L.** — 1982 — Music Director (1985), KUAC-FM. California Institute of the Arts '73, B.F.A.

**Adu-Asamoah, Richard** — 1987 — Visiting Assistant Professor of Economics (1987). SOM. University of Science and Technology, Ghana '79, B.S.; Cornell University '83, M.S.; Oregon State University '87, Ph.D.

**Ahmadian, Majid** — 1985 — Visiting Assistant Professor of Economics (1985). SOM. State University of New York at Buffalo '84, Ph.D.

**Aigner, Jean S.** — 1978 — Professor of Anthropology (1978). Head, Department of Anthropology (1986). CLA; Director of Faculty Development (1987). VCA. University of Wisconsin '64, B.A.; '66, M.A.; '69, Ph.D.

**Akasofu, Syun-Ichi** — 1958 — Director of the Geophysical Institute (1986) and Professor of Geophysics (1964). Tohoku University '53, B.S.; '57, M.S.; University of Alaska '61, Ph.D.

**Albertson, LaMont E.** — 1987 — Director and Instructor of Education (1987). KUC/RC. Oklahoma Baptist University '66, B.A.; Florida Atlantic University '67, M.Ed.

**Albrecht, C. Earl** — 1979 — Affiliate Professor of Medical Science (1979). CNS. Moravian College, Pennsylvania '26, B.A.; Moravian Theological Seminary '28, B.D.; Jefferson Medical College '32, M.D.

**Alexander, Barbara** — 1977 — Associate Professor of Art History and Humanities (1985) and Head, Department of Philosophy and Humanities, (1982). CLA; University of Zurich '75, Ph.D.

**Alexander, Vera** — 1962 — Director, Institute of Marine Science (1979); Acting Dean, School of Fisheries and Ocean Sciences (1987); and Professor of Marine Science (1974). SFOS, IMS. University of Wisconsin '55, B.A.; '62, M.S.; University of Alaska '65, Ph.D.

**Anderson, James H.** — 1970 — Research Associate (1976). IAB. University of Washington '63, B.S.; Michigan State University '70, Ph.D.

**Andresen, Marvin J.** — 1985 — Associate Professor of Business Administration (1985). SOM. University of Illinois Urbana '55, B.S.; '56, M.S.; University of Missouri '60, Ph.D.

**Andresen, Patricia A.** — 1967 — Associate Professor of Mathematics (1977). CLA. University of Illinois '55, B.S.; University of Missouri '58, M.A.; University of California at Santa Barbara '76, Ph.D.

**Argall, Marcia C.** — 1987 — Coordinator of Nenana Center (1987). RCTR/RC. University of Washington '79, B.A.

**Armbruster, W. Scott** — 1980 — Associate Professor of Botany (1987). CNS, IAB. University of California, Santa Barbara '72, B.A.; University of California, Davis '77, M.S.; '81, Ph.D.

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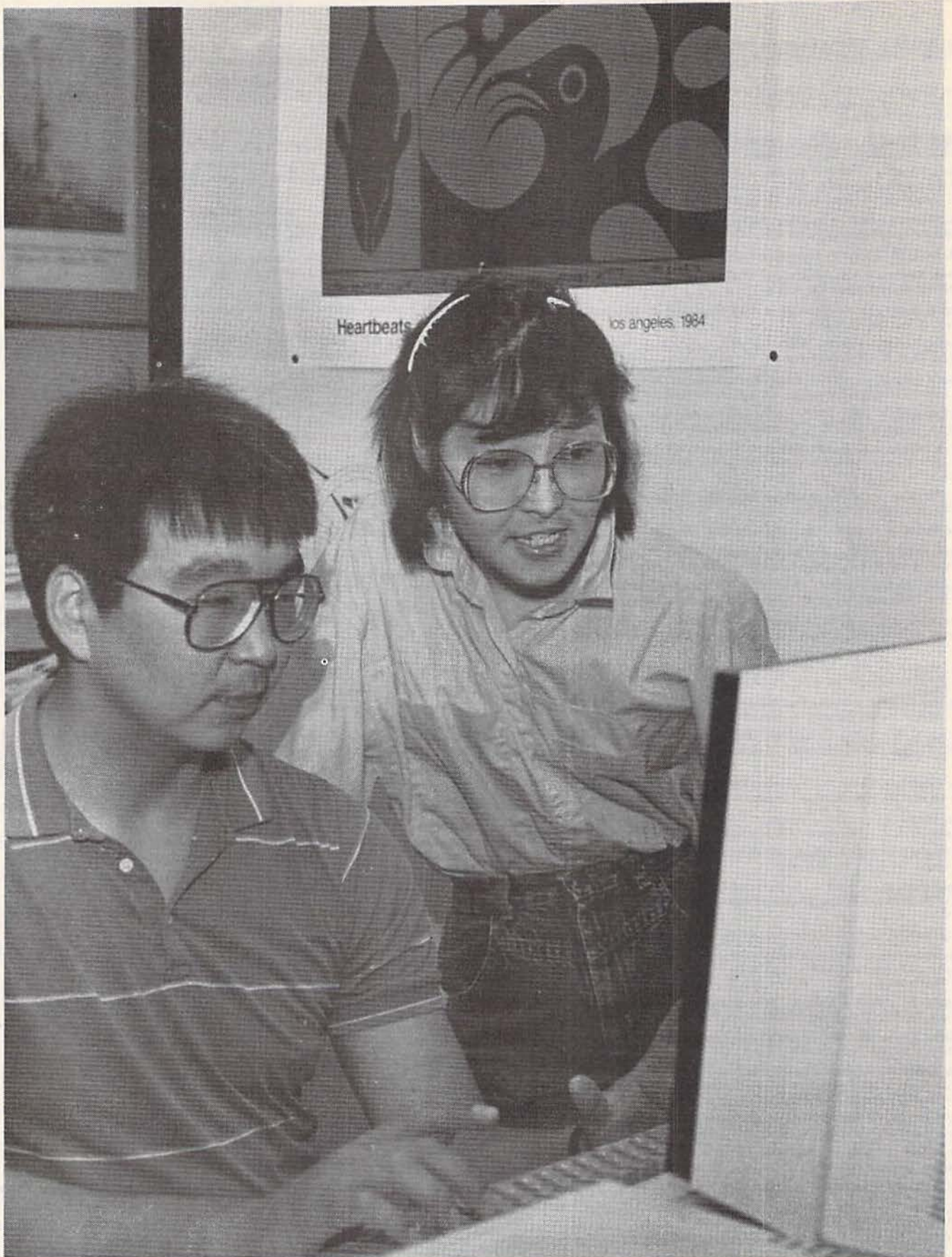
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- Windschitl, Paul M.** — 1987 — Assistant Professor of Animal Science (1987), SALRM, AFES. South Dakota University '81, B.S.; '83, M.S.; University of Minnesota '86, Ph.D.
- Winford, George M.** — 1976 — Associate Professor of Journalism (1979), CLA. Louisiana State University '64, B.A.; '76, M.J.
- Wintersteen, Theodora** — 1987 — Associate Professor of Library Science and Librarian (1987), KUC/RC. Wesleyan University '65, B.A.; Emporia State University '78, M.L.S.
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- Wooding, Frank** — 1970 — Professor of Agronomy (1982), AFES. University of Illinois '63, B.S.; Kansas State University '66, M.S.; '69, Ph.D.
- Woodward, Kesler** — 1982 — Associate Professor of Art (1988), CLA. Davidson College '73, B.A.; Idaho State University '77, M.F.A.
- Workman, Jolene J.** — 1987 — Assistant Professor of Education (1987), RC. Utah State University '65, B.S.; '67, M.S.; Brigham Young University '77, Ed.D.
- Workman, William G.** — 1973 — Associate Professor of Economics (1979), SOM. University of Wyoming '69, B.S.; Utah State University '72, M.A. '73, Ph.D.
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- Yates, Dorothy** — 1981 — Executive Officer (1984), VCR. University of the State of New York '87, B.S.
- Yau, Oliver H.M.** — 1988 — Visiting Associate Professor of Business Administration (1988), SOM. Chinese University of Hong Kong '72, B.B.A.; '74, M.B.A.; University of Bradford '86, Ph.D.
- Yauney, Jeffrey P.** — 1980 — Microcomputer Specialist (1985), STUAFF. Herkimer County Community College '79, A.A.
- Yen, Tze-Yi** — 1987 — Visiting Assistant Professor of Economics (1987), SOM. National Taiwan University '77, B.S.; University of Minnesota '87, Ph.D.
- Young, Jr., Merle B.** — 1980 — Athletic Trainer (1980), ATHREC. Harnell Junior College '60, A.A.; Montana State University '63, B.S.; Mayo Clinic '65, L.P.T., A.T.C.
- Zach, Howard L.** — 1970 — Associate Professor of Business Administration (1974), SOM. Colorado State University '64, B.S.; '66, M.S.
- Zarling, John P.** — 1976 — Associate Dean, Director of Institute of Northern Engineering (1987), Professor of Mechanical Engineering (1981), SENG, INE. Michigan Technological University '64, B.S.M.E.; '66, M.S.M.E.; '71, Ph.D.E.M., P.E.
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Senior Pat Samson, (left) gets some help and advice from his wife, Sally Samson. The two met on the UAF campus two years ago, and were married in August 1987.

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Culinary arts students Pat Carter (left) and April Pollen butcher turkeys for a meal which was served at a local restaurant as a fundraiser for the Culinary Arts Program in the School of Career and Continuing Education.

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### Credits

All photos taken by University Relations photographer Samuel Winch except back cover aurora photo by Fred Sacco, page 11 by Karen Cedzo, page 49 SEASAT image processed by the Jet Propulsion Laboratory, page 91 by Alan Paulson, and page 144 by Walter Armstrong.

### Cover Photos:

#### Front cover:

This view of the Alaska Range is why *Outside* magazine rated the view from the 8th floor of Moore Hall the "best view from a dorm room" of all American universities.  
Inset:

Pauline Walter, a senior education major from Tununak, Alaska, studies on a ledge outside the Elmer E. Rasmuson Library.

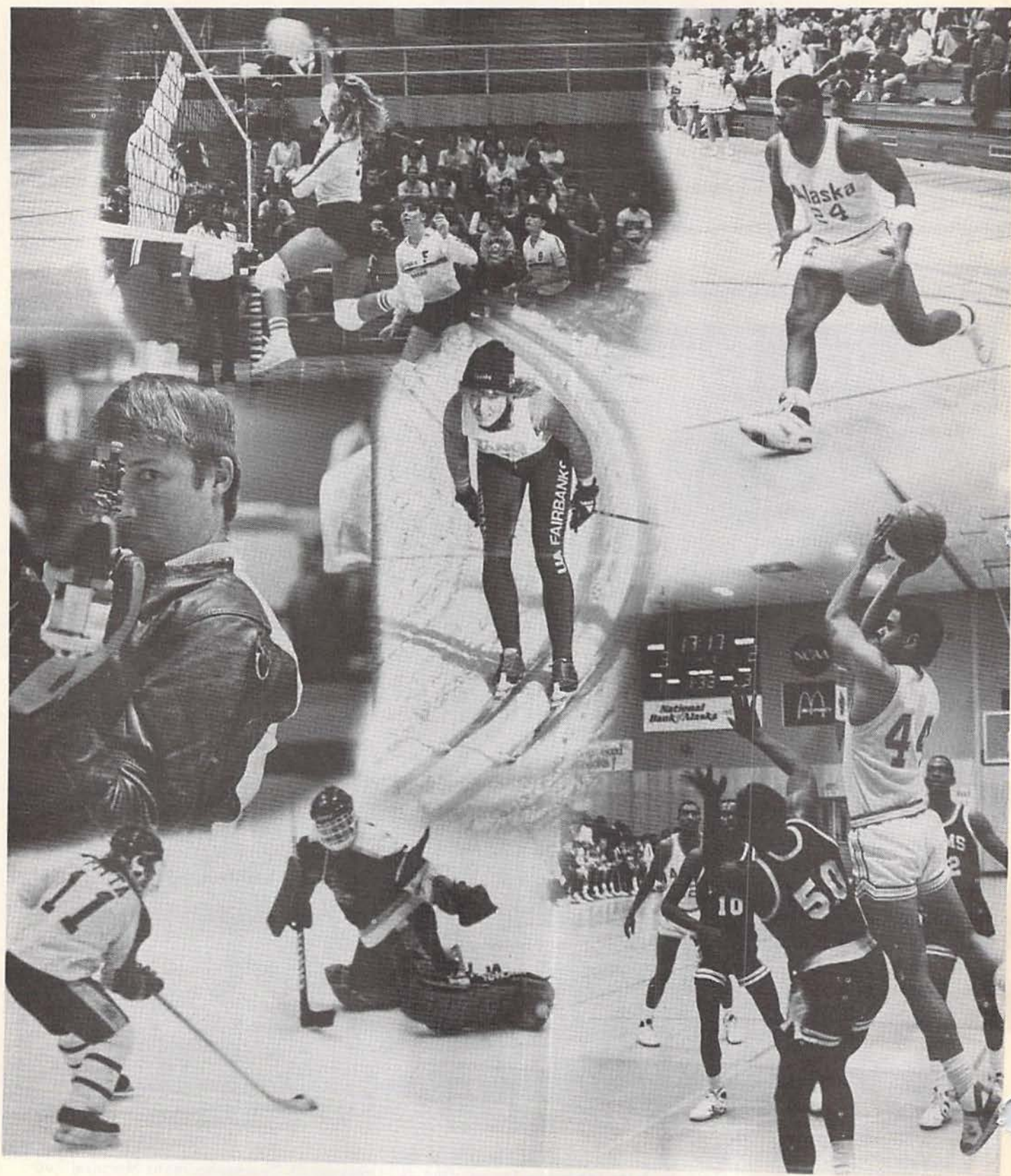
#### Back cover:

The aurora borealis, a common sight during Fairbanks winters, is the subject of research by the Geophysical Institute, located on the West Ridge of campus.

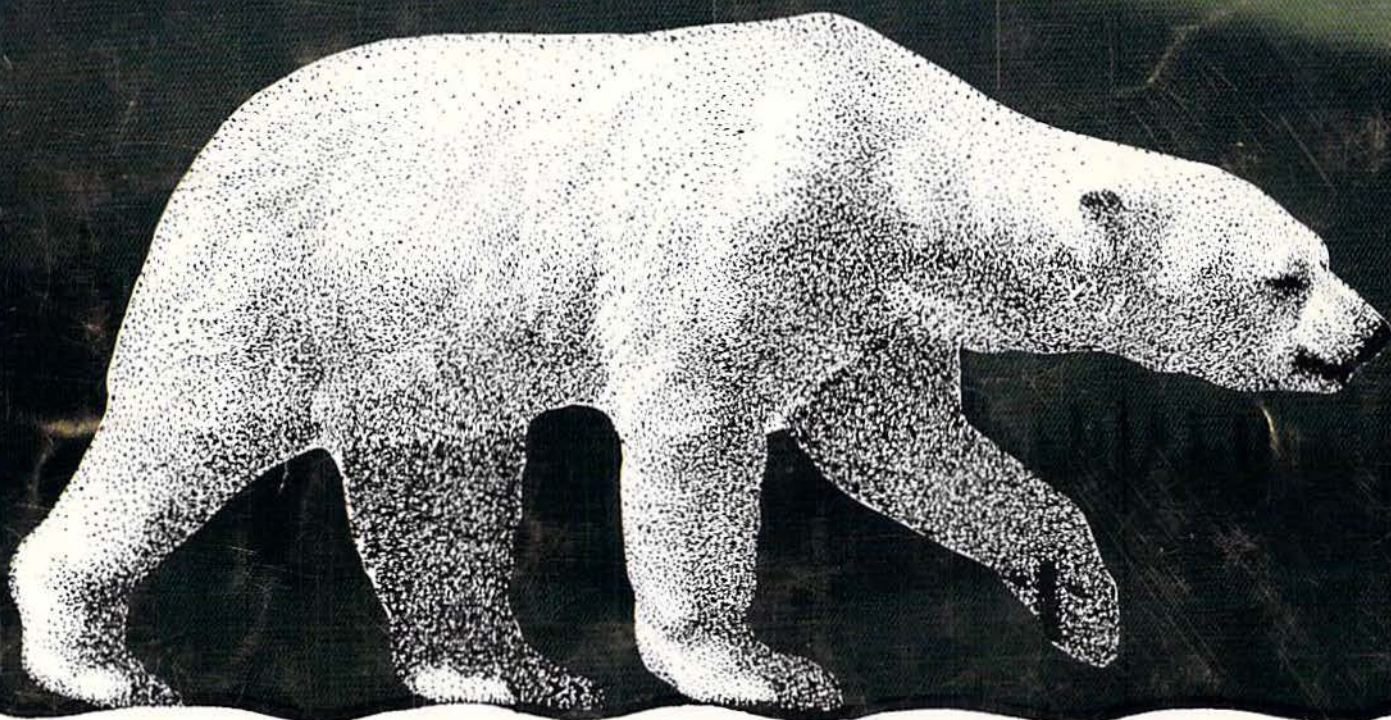


The May 1988 Commencement began with the traditional procession, led this year by Commencement Marshal Lee Salisbury, professor of speech and drama, emeritus.





Nanook teams are active in a variety of sports for the spectator or player.



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