

# 2003-04 CATALOG

## PHYSICS

B.S. Degree Requirements  
130 Credits

### GENERAL REQUIREMENTS

#### COMMUNICATIONS:- (9)

Engl 111X (3)\_\_\_\_  
Engl 211X or 213X (3)\_\_\_\_  
Comm 131X or 141X (3)\_\_\_\_

#### PERSPECTIVES ON THE HUMAN CONDITION:- (18-22)

Complete the 6 courses listed **OR** 4 of those listed plus 2 semester length courses in a single AK Native or other non-English language or 3 semester length courses (9 credits) in American Sign Language.

Anth 100X/Soc 100X (3)\_\_\_\_  
Econ/PS 100X (3)\_\_\_\_  
Hist 100X (3)\_\_\_\_  
Art/Mus/Thr 200X or Hum 201X or  
Ans 202X (3)\_\_\_\_  
Engl/FL 200X (3)\_\_\_\_  
Comm 300X or Just 300X or Nrm 303X or  
Phil 322X or PS 300X (3)\_\_\_\_  
Language option as listed above:  
\_\_\_\_\_( )\_\_\_\_ \_\_\_\_\_( )\_\_\_\_ \_\_\_\_\_( )\_\_\_\_

#### MATHEMATICS:- (24)

Math 200X (4)\_\_\_\_ Math 202X (4)\_\_\_\_  
Math 201X (4)\_\_\_\_ Math 302 (3)\_\_\_\_  
Complete 9 Math credits at the 300 level or above:  
\_\_\_\_\_( )\_\_\_\_+ \_\_\_\_\_( )\_\_\_\_+  
\_\_\_\_\_( )\_\_\_\_+ \_\_\_\_\_( )\_\_\_\_+

#### NATURAL SCIENCE:- (8)

Two 4-credit courses with labs from approved Natural Science core courses with depth (EXCLUDING Phys 103 & 104) or breadth emphasis.  
\_\_\_\_\_( )\_\_\_\_ \_\_\_\_\_( )\_\_\_\_

#### LIBRARY & INFO SKILLS:- (0-1)

LS competency test \_\_\_\_ OR  
LS 100X or 101X (1)\_\_\_\_

#### UPPER DIVISION CREDITS:- (39)

Transfer Credits \_\_\_\_  
UAF Credits (24)\* \_\_\_\_  
TOTAL TO DATE: \_\_\_\_  
TO BE COMPLETED: \_\_\_\_

\*a minimum of 24 UAF credits  
(phys-1)

\*Designates only grades of "C" or better may be used to fulfill this requirement.

### \*MAJOR REQUIREMENTS

Complete the following:- (53)

Phys 113 (1)\_\_\_\_  
Phys 211X (4)\_\_\_\_+  
Phys 212X (4)\_\_\_\_+  
Phys 213X (4)\_\_\_\_+  
Phys 311 (4)\_\_\_\_  
Phys 312 (4)\_\_\_\_  
Phys 313 (4)\_\_\_\_  
Phys 331 (3)\_\_\_\_  
Phys 332 (3)\_\_\_\_  
Phys 381 (3)\_\_\_\_(W/O)  
Phys 382 (3)\_\_\_\_(W)  
Phys 411 (4)\_\_\_\_  
Phys 412 (4)\_\_\_\_  
Phys 445 (4)\_\_\_\_  
Phys 462 (4)\_\_\_\_

+May be used to meet one year sequence requirement.

#### ELECTIVES (for a total of 130 credits):\*\*

\_\_\_\_\_( )\_\_\_\_ \_\_\_\_\_( )\_\_\_\_  
\_\_\_\_\_( )\_\_\_\_ \_\_\_\_\_( )\_\_\_\_  
\_\_\_\_\_( )\_\_\_\_ \_\_\_\_\_( )\_\_\_\_  
\_\_\_\_\_( )\_\_\_\_ \_\_\_\_\_( )\_\_\_\_  
\_\_\_\_\_( )\_\_\_\_ \_\_\_\_\_( )\_\_\_\_

COMPLETE 2 DESIGNATED (W) COURSES AND 1 COURSE DESIGNATED (O) OR 2 COURSES DESIGNATED (O/2) AT THE UPPER DIVISION LEVEL:

\_\_\_\_\_(W) \_\_\_\_\_(W)  
\_\_\_\_\_(O) OR \_\_\_\_\_(O/2) \_\_\_\_\_(O/2)

Credits required for core:	60
Credits required for major:	53
Elective credits:	13-17
Total credits required for degree:	<u>130</u>

**Physics BS schedules:**

***Begins with math placement in Math 108 - Trigonometry***

**First Year: Fall**

CHEM 105X - General Chemistry I	4	
ENGL 111X - Intro to Academic Writing	3	
LS 101- Library Info and Research	1	
MATH 108 - Trigonometry	3	
PHYS 113 - Concepts of Physics	1	
Core Perspectives (1 of 6)	3	15

**Second Year: Fall**

ENGL 211X or 213X	3	
MATH 201X - Calculus II	4	
PHYS 211X - General Physics I	4	
Core Perspectives (3 of 6)	3	
Core Perspectives (4 of 6)	3	17

**Third Year: Fall**

MATH 302 - Differential Equations	3	
PHYS 311- Mechanics	4	
PHYS 331- Electricity and Magnetism	3	
PHYS 381- Physics Laboratory	3	13

**Fourth Year: Fall**

MATH 421 (or other 300+ level math elective)	4	
PHYS 313- Thermodynamics and Statistical Phys	4	
PHYS 411- Modern Physics	4	
PHYS 462- Geometrical and Physical Optics	4	16

**First Year: Spring**

CHEM 106X - General Chemistry II	4	
Comm 131X/141X	3	
MATH 200X - Calculus I	4	
Core Perspectives (2 of 6)	3	14

**Second Year: Spring**

MATH 202X - Calculus III	4	
MATH 314 (or other 300+ level math elective)	3	
PHYS 212X - General Physics II	4	
PHYS 213X - Elem. Modern Physics	4	15

**Third Year: Spring**

PHYS 312- Mechanics	4	
PHYS 332- Electricity and Magnetism	3	
PHYS 382- Physics Laboratory	3	
Core Perspectives (5 of 6)	3	13

**Fourth Year: Spring**

MATH 422 (or other 300+ level math elective)	4	
PHYS 412- Modern Physics	4	
PHYS 445- Solid St. Physics and Phys Elect	4	
Core Perspectives (6 of 6)	3	15

**This totals 118 credits. Suggested electives for a total of 130 credits:**

PHYS 220 (4)	CS 201 (3)	CS 202 (3)	MATH 305 (3)
MATH 308 (3)	MATH 310 (3)	MATH 412 (3)	ENGL 314 (3)

***Begins with math placement in Math 200X - Calculus I***

**First Year: Fall**

CHEM 105X - General Chemistry I	4	
ENGL 111X - Intro to Academic Writing	3	
LS 101- Library Info and Research	1	
MATH 200X - Calculus I	4	
PHYS 113 - Concepts of Physics	1	13

**Second Year: Fall**

ENGL 211X or 213X	3	
MATH 202X - Calculus III	4	
PHYS 212X - General Physics II	4	
Core Perspectives (1 of 6)	3	
Core Perspectives (2 of 6)	3	17

**Third Year: Fall**

MATH 421 (or other 300+ level math elective)	4	
PHYS 311- Mechanics	4	
PHYS 331- Electricity and Magnetism	3	
PHYS 381- Physics Laboratory	3	14

**Fourth Year: Fall**

PHYS 313- Thermodynamics and Statistical Phys	4	
PHYS 411- Modern Physics	4	
PHYS 462- Geometrical and Physical Optics	4	
Core Perspectives (5 of 6)	3	15

**First Year: Spring**

CHEM 106X - General Chemistry II	3	
Comm 131X/141X	3	
MATH 201X - Calculus II	4	
PHYS 211X - General Physics I	4	15

**Second Year: Spring**

MATH 302 - Differential Equations	3	
MATH 314 (or other 300+ level math elective)	3	
PHYS 213X - Elem. Modern Physics	4	
Core Perspectives (3 of 6)	3	
Core Perspectives (4 of 6)	3	16

**Third Year: Spring**

MATH 422 (or other 300+ level math elective)	4	
PHYS 312- Mechanics	4	
PHYS 332- Electricity and Magnetism	3	
PHYS 382- Physics Laboratory	3	14

**Fourth Year: Spring**

PHYS 412- Modern Physics	4	
PHYS 445- Solid St. Physics and Phys Elect	4	
PHYS 488- Undergraduate Research	1-3	
Core Perspectives (6 of 6)	3	12-14

**This totals 116-118 credits. Suggested electives for a total of 130 credits:**

PHYS 220 (4)	CS 201 (3)	CS 202 (3)	MATH 305 (3)
MATH 308 (3)	MATH 310 (3)	MATH 412 (3)	ENGL 314 (3)