

2014-15 BA Biological Sciences

120 Credit minimum

*designates only grades of “C” or better (not ‘C-’) may be used to fulfill these requirements

GENERAL REQUIREMENTS

COMMUNICATIONS (9)

*ENGL 111X Intro to Academic Writing (3) _____

ENGL 211X Academic Writing -Literature **OR**

ENGL 213X Academic Writing - Social & Nat. Sci. (3) _____

*COMM 131X Group Communications **OR**

COMM 141X Public Speaking (3) _____

PERSPECTIVES ON THE HUMAN CONDITION (18-22)

All Perspectives Core require ENGL 111X placement; 200 level courses-sophomore standing or higher; 300 level - junior standing or higher

6 courses listed below **OR** 4 courses listed below **AND** 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 Individual, Society & Culture (3) _____

ECON/PS 100X World Political Economy (3) _____

HIST 100X World History (3) _____

ART/MUS/THR200X **OR** HUM201X **OR** ANS202X Art Appreciation (3) _

ENGL/FL 200X World Literature (3) _____

BA 323X **OR** COMM 300X **OR** JUST 300X **OR** NRM 303X **OR** PHIL

322X **OR** PS 300X (these are all 300 level Ethics courses) (3) _____

Language option as listed above—but may not be listed/counted under humanities or minor requirements:

_____ () _____ () _____ () _____

SOCIAL SCIENCE/HUMANITIES (18)

Each area must include at least 6 credits. Twelve credits of a non-English language taken at the university level may fulfill the humanities requirement. May use courses listed under minor but not from Perspectives on the Human Condition Core. *As part of this requirement, take at least 9 credits of upper division.*

_____ () _____ () _____

_____ () _____ () _____

_____ () _____ () _____

MINOR: _____ (min. 15 credits)

As part of this requirement, take at least 3 credits of upper division.

_____ () _____ () _____ () _____

_____ () _____ () _____ () _____

MATHEMATICS & STATISTICS (6-7)

Requires recent Math Placement and/or prereqs

*STAT 200X Elementary Probability & Statistics (3) _____

*MATH 107X or 161X or 103X or 200/201/202/262/272X (3-4) _____

NATURAL SCIENCE (8)

*CHEM 105X General Chemistry I (4) _____

*CHEM 106X General Chemistry II (4) _____

NOTE: *CHEM 105X is a prereq (C or higher)/co-req for BIOL 115X—both require MATH 107X & ENGL 111X or higher placement. For concurrent enrollment, if you drop CHEM 105X during the semester, you may be dropped from BIOL 115X as well.*

LIBRARY & INFO SKILLS (0-1)

LS competency test _____ OR LS 100X or 101X (1) _____

UPPER DIVISION CREDITS (300 & 400-level) (39)

Transfer Credits: _____; minimum of 24 UAF Credits _____

*MAJOR REQUIREMENTS

All Biology courses higher than BIOL 116X listed below have BIOL 115X/116X as well as at least MATH 107X/ENGL 111X placement prereqs (except BIOL 213X & 214X) (prereqs in parenthesis)

1. Complete the following (24):

*BIOL 115X Fundamentals of Biology I – fall/summer (CHEM 105X or concurrent, MATH 107X & ENGL 111X placement) (4) _____

*BIOL 116 Fundamentals of Biology II – spring/summer (BIOL 115X) (4) _

*BIOL 260 Principles of Genetics – fall/spring (CHEM 105X, MATH 107X) (4) _

*BIOL 481 Principles of Evolution – fall/spring (BIOL 260; STAT 200 or concurrent enrollment in STAT 200, junior or higher) (4) _

*CHEM 321 Organic Chem I - fall (CHEM 106X) (3/4) _____

*PHYS 103 College Physics I – fall (DEVM 105 & ENGL 111X placement) (4) _____

2. Complete 2 of the listed 3 biology breadth requirements (7-12):

Breadth courses serve as prereqs for many upper division biology electives, therefore select according to anticipated biology electives

A. *BIOL 360 Cell & Molecular Biology – typically spring (BIOL 260, CHEM 105X & 106X) (3) _____

B. *BIOL 371 Principles of Ecology – fall (LS 100X/101X) (4) _____

C. Physiology—**complete one of the following:**

*BIOL 310 Animal Physiology – fall (CHEM 105X/106X) (4) _____

OR*BIOL 434 Structure and Function in Vascular Plants, - odd spring (MATH 107, ENGL 111X & 211X/213X) (4) _____

OR*BIOL 342 Microbiology - spring (CHEM 105X) (4) _____

OR*BIOL 213X Human Anatomy & Physiology I – fall/summer (Placement in DEVM 105 and ENGL 111X or higher, completion of CHEM 103X or CHEM 105X) (4) _____ **AND**

*BIOL 214X Human Anatomy & Physiology II – spring/summer (BIOL 213X, CHEM 103X or 105X) (4) _____

3. Complete three (3) elective courses from biology course lists A, B, C, or D (on reverse), at least one of which is designated a “W” (9-12). Independent study (BIOL 397 or BIOL 497) or a research experience course (URSA 388, BIOL 488 or BIOL 490) may be substituted by petition for a maximum of two required elective courses in biology (3-4 credits per substituted course).

4. Complete a biology capstone project. Can be met through petition following the completion of a mentored research project with a faculty member (e.g., by taking BIOL 497 or BIOL 490 or without course credits) or automatically by completing at least **ONE** of the following courses (all have BIOL 115X and 116X prereqs) (0-4):

*BIOL 434 (W) Structure and Function in Vascular Plants- odd spring (MATH 107, ENGL 111X & 211X/213X) (3) _____

*BIOL 472 (W) Community Ecology – even fall (BIOL 371, ENGL 111X & 211X/213X) (3) _____

*BIOL 441 (W, O/2) Animal Behavior - fall (BIOL 371, BIOL 310, COMM 131X/141X, ENGL 111X & 211X/213X, coreq BIOL 481) (3) _____

*BIOL 473(W) Limnology – odd fall (BIOL 371, CHEM 105X & 106X, ENGL 111X & 211X/213X) (3) _____

*BIOL 403 (W) Metabolism & Biochemistry - fall (CHEM 105X & 106X, BIOL 360, COMM 131X/141X, ENGL 111X & 211X/213X) (4) _

ELECTIVES (for a program total of 120 credits):

_____ () _____ () _____

_____ () _____ () _____

WRITING AND ORAL INTENSIVE COURSES:

Required: 2 DESIGNATED (W); **AND**

1 DESIGNATED (O) COURSE OR 2 DESIGNATED (O/2) AT THE UPPER DIVISION LEVEL:

_____ (W) _____ (W)

_____ (O) OR _____ (O/2) _____ (O/2)

^ or permission of instructor

2014-15 BA & BS Biological Sciences Degree Programs
List A-D Supplement – all require grade of ‘C’ or higher*
See current catalog for prereqs and when offered

***List A – Cell and Molecular Biology**

BIOL 342 Microbiology (3)
 BIOL 360 Cell and Molecular Biology (3)
 BIOL 403 Metabolism and Biochemistry (W) (4)
 BIOL 417 Neurobiology (O) (3)
 BIOL 462 Concepts of Infectious Disease (O)(3)
 BIOL 465 Immunology (3)
 BIOL 4xx Principles of Virology (3)
 CHEM 322 Organic Chemistry II (3)
 CHEM 450 General Biochemistry– Macromolecules (3)
 CHEM 451 General Biochemistry – Metabolism (3)
 CHEM 470 Cellular and Molecular Neuroscience (3)
 CHEM 474 Neurochemistry (3)

***List B – Physiology**

BIOL 310 Animal Physiology (4)
 BIOL 317 Comparative Anatomy (4)
 BIOL 335 Epidemiology (3)
 BIOL 342 Microbiology (4)
 BIOL 417 Neurobiology (O) (3)
 BIOL 422 Physiology and Ecology of Overwintering (3)
 BIOL 434/334 Structure & Function in Vascular Plants, (W)(4)
 BIOL 441 Animal Behavior, (W, O/2) (3)
 BIOL 445 Environmental Toxicology (W, O) (3)
 BIOL 457 Environmental Microbiology (W) (3)
 BIOL 458 Vertebrate Endocrinology (3)
 BIOL 459 Wildlife Nutrition (O/2) (4)
 BIOL 462 Concepts of Infectious Disease (O) (3)
 BIOL 465 Immunology (3)
 BIOL 494 Principles of Virology (3)

***List C – Ecology and Evolutionary Biology**

BIOL 371 Principles of Ecology (4)
 BIOL 418 Biogeography (3)
 BIOL 422 Physiology and Ecology of Overwintering (3)
 BIOL 433 Conservation Genetics (3)
 BIOL 441 Animal Behavior, (W, O/2) (3)
 BIOL 457 Environmental Microbiology (W) (3)
 BIOL 462 Concepts of Infectious Disease (O) (3)
 BIOL 469 Landscape Ecology and Wildlife Habitat (O) (3)
 BIOL 471 Population Ecology (3)
 BIOL 472 Community Ecology (W) (3)
 BIOL 473 Limnology (W) (3)
 BIOL 474 Plant Ecology (4)
 BIOL 476 Ecosystem Ecology (O) (3)
 BIOL 483 Stream Ecology (3)
 BIOL 485 Global Change Ecology (3)
 BIOL 486 Vertebrate Paleontology (3)
 BIOL 487 Conceptual issues in Evolutionary Biology (3)
 BIOL 488 Arctic Vegetation Ecology: Geobotany (3)
 BIOL 489 Vegetation Description and Analysis (3)
 WLF 301 Design of Wildlife Studies (3)
 WLF 410 Wildlife Populations and Their Management (3)

***List D - Organismal**

BIOL 301 Biology of Fishes (4)
 BIOL 305 Invertebrate Zoology (4)
 BIOL 317 Comparative Anatomy (4)
 BIOL 331 Systematic Botany (4)
 BIOL 406 Entomology (4)
 BIOL 418 Biogeography (4)
 BIOL 425 Mammalogy (W) (3)
 BIOL 426 Ornithology (W,O/2) (3)
 BIOL 427 Ichthyology (4)
 BIOL 486 Vertebrate Paleontology (3)
 BIOL 489 Vegetation Description and Analysis (3)