2013-14 BS Biological Sciences  
Ecology & Evolutionary Concentration

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 141X Public Speaking (3)___

*PERSPECTIVES ON THE HUMAN CONDITION:-(18-22)
Complete 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. All Perspectives Core require English 111 placement; 200 level courses- sophomore standing or higher; 300 level - junior standing or higher

ANTH 100X/SOC 100X Individual, Society & Culture (3)___
ECON/PS 100X World Political Economy (3)___
HIST 100X World History (3)___
ART/MUS/THR 200X or HUM 201X or ANS 202X Art Appreciation or ENGL/LF 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 counted under minor requirements:

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*MATHEMATICS & STATISTICS:-(6-7)
Requires recent Math Placement and/or prerequisites
*STAT 200X Elementary Probability & Statistics(3)___
  OR *STATS 300 Statistics (3)___
*MATH 272X Calculus for Life Sciences (3)___
  OR *MATH 200X Calculus (4)___

*NATURAL SCIENCE:-(16)
CHEM 105X General Chemistry I (4)___
  and CHEM 106 General Chemistry II (4)___
PHYS 103 College Physics I, Fall, DEV M 105 & ENGL 111 placement (4)___
  and *PHYS 104 College Physics II - Spring (4)___

LIBRARY & INFO SKILLS:-(0-1)
LS competency test OR LS 100X or 101X (1)___

WRITING AND ORAL INTENSIVE COURSES:
Required: 2 DESIGNATED (W);  AND
1 DESIGNATED (O) COURSE OR 2 DESIGNATED (O/2):
________________(W)________________(W) and
________________(O) OR _____________(O/2) _____________(O/2)

UPPER DIVISION CREDITS (300 & 400-level):-(39)
Transfer Credits ___ minimum of 24 UAF Credits ___

*MAJOR REQUIREMENTS (All BIOL courses except BIOL 213/214 listed below have BIOL 115/116 prerequisites as well as at least MATH 107/ENGL 111 placement prerequisites)

*1. Complete the following (27-32):
*BIOL 115 Fundamentals of Biology I – Fall/Summer, MATH 107 & ENGL 111 placement, Chem 105 or concurrent enrollment (4)___
*BIOL 116 Fundamentals of Bio II – Spring/Summer, BIOL 115X (4)___
*BIOL 260/362 Principles of Genetics, CHEM 105, MATH 107 (4)___
*BIOL 481 Principles of Evolution, BIOL 260/362; STAT 200 pre req (or concurrent enrollment in STAT 200), junior standing or higher, stacked w/ BIOL 681, (4)___

*BIOL 310 Animal Physiology, Fall, CHEM 105/106 pre req (4)___
  OR *BIOL 334 Structure and Function in Vascular Plants, odd Spring, MATH 107, ENGL 111 & 211/213 pre reqs ^ (W) (4)___
  OR *BIOL 342 Microbiology, Spring, Chem 105 pre req (4)___
  OR *BIOL 213/111 Human Anatomy & Physiology I, Fall, Placement in DEVM 105 and ENGL 111X or higher pre reqs ^; CHEM 103X or CHEM 105X (4)___ and
  *BIOL 214/112 Human Anatomy & Physiology II, Spring, BIOL 213X/111X, CHEM 103X or 105X pre req (4)___

*CHEM 321 Organic Chem I, Fall, Chem 106 pre req ^ (4)___
  and *CHEM 322 Organic Chem II, Spring, Chem 211 pre req *(3)___
  or *Chem 451 General Biochemistry – Metabolism, Spring, Chem 321 pre req” (3)___

2. Complete the following electives – at least one course must satisfy W requirement: - (22-28) Lists on reverse:

*BIOL 371/271 Principles of Ecology, LS 100/101 (4)___
*Ecology & evolutionairy biology electives – two courses from list C (6-8)
*Organismal – one course from List D (3-4)___
*Biology breadth elective – one additional course from Lists A or B (3-4)
*Biology elective – one additional course from Lists A, B, C or D (3-4)
*STAT 401 Regression & Analysis of Variance, STAT 200 or 300 pre req. ^ (4)___
  OR *STAT 402 Scientific Sampling, STAT 200 or 300 pre req. ^ (3)___

3. Complete a biology capstone project (0-4) Can be met through petition following the completion of a mentored research project w/ 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:

*BIOL 434/334 Structure and Function in Vascular Plants, odd Spring, MATH 107, ENGL 111 & 211/213 pre reqs ^ (W) (4)___
*BIOL 472 Community Ecology, Fall even years, BIOL 271/371, ENGL 111 & 211/213 pre reqs ^ (W) (3)___
*BIOL 441 Animal Behavior, Fall, BIOL 271/371, BIOL 310, COMM 131/141, ENGL 111&211/213 prereqs, BOL 481 co-req ^ (W, O/2) (4)___
*BIOL 473 Limnology, Fall, BIOL 271/371, Chem 105 & 106, ENGL 111&211/213 pre reqs ^ (W) (3)___
*BIOL 403 Metabolism & Biochemistry, Fall, Chem 105&106, BIOL 261/360, COMM 131/141, ENGL 111&211/213 pre reqs ^ (W) (4)___

^ or permission of instructor

ELECTIVES** (for a program total of 120 credits):

____________________(____)____
____________________(____)____
____________________(____)____

**a minor is optional with a BS degree – see current catalog for more details and requirements. If a minor is selected, there will be fewer free electives required.
## 2013-14 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 360/261 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, Fall, CHEM 105/106 prereq (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 371/271 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)

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Once the student decides on a concentration, the student should send an email to registrar@uaf.edu with the student’s name, ID number, and choice of concentration. This will assist w/correct tracking in DegreeWorks.