

2014-15 BS Biological Sciences

Cell and Molecular 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 (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 counted under minor requirements:

_____ () _____ () _____ () _____

*MATHEMATICS & STATISTICS:- (6-7)

Requires recent Math Placement and/or prereqs

*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 105 is a pre/co-req for BIOL 115 -both require MATH 107 & ENGL 111 or higher placement. You MUST have passed CHEM 105 (C or higher) prior to taking BIOL 115 or be concurrently enrolled – for concurrent enrollment, if you drop CHEM 105 during the semester, the BIOL 115 faculty may also drop you from their course as well.

CHEM 105 General Chemistry I (4)_____

and CHEM 106 General Chemistry II (4)_____

PHYS 103 College Physics I, Fall, DEVM 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 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) (additional prereqs in parenthesis)

*1. Complete the following:

*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 Principles of Genetics– fall/spring (CHEM 105, Math 107) (4)_____

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

*BIOL 310 Animal Physiology- Fall (CHEM 105/106) (4)_____

OR *BIOL 334 Structure and Function in Vascular Plants- odd Spring (MATH 107, ENGL 111 & 211/213) ^ (W) (4)_____

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

OR *BIOL 213 Human Anatomy & Physiology I- Fall (Placement in DEVM 105 and ENGL 111X or higher^; Completion of CHEM 103X or CHEM 105X (4)_____ and

*BIOL 214 Human Anatomy & Physiology II- Spring (BIOL 213X, CHEM 103X or 105X) (4)_____

*CHEM 321 Organic Chem I - Fall, (CHEM 106) (4)_____

*CHEM 322 Organic Chem II – Spring (CHEM 321) (3)_____

*2. Complete the following concentration requirements (at least one must meet W requirement) Lists on reverse:

*BIOL 360 Cell & Molecular – typically spring (BIOL 260, CHEM 105 & Chem 106) (3)_____

*CHEM 450 General Biochem Macromolecules- Fall (CHEM 322) (3)_____

*CHEM 451 General Biochem Metabolism - Spring (CHEM 321) (3)_____

*Cell & molecular or physiology electives - take three additional courses from Lists A or B, at least one of which must be from list A.

*Biology breadth elective – take one addition from Lists C or D

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 Structure and Function in Vascular Plants- odd Spring (MATH 107, ENGL 111 & 211/213) (W) (4)_____

*BIOL 472 Community Ecology- even Fall (BIOL 371, ENGL 111& 211/213) (W) (3)_____

*BIOL 441 Animal Behavior- Fall (BIOL 371, BIOL 310, COMM 131/141, ENGL 111& 211/213; BIOL 481 co-req) (W, O/2) (4)_____

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

*BIOL 403 Metabolism & Biochemistry- Fall (CHEM 105&106, BIOL 360, COMM 131/141, ENGL 111& 211/213) (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.*

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)

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.