

2018-19 BS Biological Sciences Cell and Molecular Concentration

120 Credit minimum – Grade of C- or higher for all classes

GENERAL REQUIREMENTS

COMMUNICATIONS

WRWG 111X Intro to Academic Writing (3)____
WRWG 211X or 212X or 213X or 214X.(3)____
COJO 121X or 131X or 141X (3)____

GER Arts, Humanities, Social Sciences, & Ethics:

All GER in this category require WRWG 111 placement; 200 level courses- sophomore standing or higher; 300 level - junior standing or higher
1 course from Art category
1 course from Humanities category
2 courses from Social Science category (must be two different disciplines)
1 additional course from any above Arts/Humanities/Social Science category
See attached for category lists of courses.
1 GER Ethics: BA 323; COJO 300; JUST 300; NRM 303; PHIL 322; or PS 300

MATHEMATICS & STATISTICS:-

Requires recent Math Placement and/or prereqs
STAT 200X Elementary Probability & Statistics (3)____
OR STAT 300 Statistics (3)____
Math 230X Calculus with Applications (3)____
OR Math 251X Calculus (4)____

NATURAL SCIENCE:-

CHEM 105 is a pre/co-req for BIOL 115 -both require MATH 151 & WRWG 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 & WRWG 111 placement (4)
and one of the following:

PHYS 104 College Physics I – spring (PHYS 103) (4) ____

OR CS 103 Introduction of Computer Programming – (math placement at 100 level) (3) ____

OR CS 201 Computer Science I – (math placement at 200 level; high school programming or CS 103) (3)____

OR PHYS 211 General Physics I (concurrent enrollment in Math 252) (4) _
and one of the following:

PHYS 212 General Physics II – (concurrent enrollment in Math 253) (4) ____

OR CS 103 Introduction of Computer Programming – (math placement at 100 level) (3) ____

OR CS 201 Computer Science I – (math placement at 200 level; high school programming or CS 103) (3)____

LIBRARY & INFO SKILLS:- (0-1)

LS competency test____ OR LS 101X (1)____

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

Transfer Credits ____ minimum of 24 UAF 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

MAJOR REQUIREMENTS

All Biology courses higher than BIOL 116X listed below have BIOL 115X/116X as well as at least MATH 151X/WRWG 111X placement prereqs (except BIOL 111X & 112X) (additional prereqs in parenthesis)

1. Complete the following:

BIOL 115 Fundamentals of Biology I – (Math 151 & WRWG 111 placement, CHEM 105 or concurrent enrollment) (4)_

BIOL 116 Fundamentals of Bio II – (BIOL 115X) (4)____

BIOL 260 Principles of Genetics– (CHEM 105, Math 151, LS 101) (4)_

BIOL 481 Principles of Evolution – (BIOL 260; STAT 200 or concurrent enrollment in stats, 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 151, WRWG 111 & 211/etc) ^ (4)____

OR BIOL 342 Microbiology- Spring (CHEM 105) (4)____

OR BIOL 111 Human Anatomy & Physiology I- Fall/summer (Placement in DEVM 105 and WRWG 111X or higher) (4)____

and BIOL 112 Human Anatomy & Physiology II- Spring/summer (BIOL 213X) (4)____

CHEM 321 Organic Chem I- Fall (CHEM 106) (4)____

CHEM 325 Organic Chem II- Spring (CHEM 321) (4)____

2. Complete the following Biology electives (7 courses):

BIOL 360 Cell & Molecular – spring (BIOL 260, CHEM 105 & CHEM 106) (3)____

CHEM 351 General Biochemistry: Metabolism – spring (CHEM 321)(3)_

CHEM 450 Information Storage & Transfer - fall (CHEM 321) (3)_

One additional from List A (3-4)

Two additional from List A or B (6-8)

One additional course from List C or D (3-4)

Independent study (BIOL 397 or BIOL 497) or a research experience course (URSA 388, URSA 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). These can also potentially be utilized as a capstone research project as well. Study content determines to which list the course will be assigned.

3. BIOL 400 (0)____ 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. The below classes can also be utilized to meet one of the specific Biology list electives above to which it's assigned.

BIOL 434 Structure and Function in Vascular Plants- odd spring (MATH 151, WRWG 111X & 211X/etc) (3) ____

BIOL 441 Animal Behavior - fall (BIOL 371, BIOL 310, COJO 131X/141X, WRWG 111X & 211X/etc, coreq BIOL 481) (3) ____

BIOL 466 Advanced Cell & Molecular Laboratory –spring (BIOL 360)(3)_

BIOL 472 Community Ecology – even fall (BIOL 371, WRWG 111X & 211X/etc) (3) ____

BIOL 473 Limnology – odd fall (BIOL 371, CHEM 105X & 106X, WRWG 111X & 211X/etc) (3) ____

BIOL 491 The Human Microbiome – fall (BIOL 260 or Stat 200)(4)____

BIOL 394 MORE Behavioral Neurobiology – spring (3) ____

ELECTIVES (for a program total of 120 credits):

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^ or permission of instructor