Bachelor of Science (BS) Non-teaching
Degree Code 124A

Program of Study for Biology Majors

CELL/MOLECULAR BIOLOGY

I. GENERAL EDUCATION CURRICULUM ........................................................................................................................................64

II. MAJOR REQUIREMENTS (Not including 12 semester hours already counted in I, above) ........................................................................................................................................66
   2.0 major GPA is required for graduation. Major GPA calculation will include all courses taken in the major department, plus any other courses under II. Minimum of 18 semester hours of courses taken to fulfill major requirements must be courses offered by Appalachian.

   A. Biology Core Requirements: 8 semester hours (must be completed before taking any other biology courses)
   
   BIO 1801 (4) Biological Concepts I (Co: CHE 1101) AND BIO 1802 (4) Biological Concepts II (Pre: BIO 1801 w/"C" or better)

   B. Additional Required Biology Courses: 21 semester hours (Pre: BIO 1801 & 1802 required for all additional BIO courses)
   
   BIO 2400 (3) Genetics (Pre: CHE 1102, MAT 1025) OR BIO 2700 (3) Human Genetics (Pre: CHE 1102, MAT 1025)
   BIO 2600 (3) Cell Biology (Pre: CHE 1102)
   BIO 3436 (3) Introduction to Evolutionary Biology
   BIO 3800 (4) Molecular Biology [WID] (Pre: CHE 2201 or 2101; ENG 2001)

   Choose one of the following: (Pre: Senior standing; WID)
   BIO 4501 (3) Independent Research [CAP]
   BIO 4700 (3) Seminar in Biological Science [CAP]
   BIO 4910 (3) Capstone Internship in Biology [CAP]

   Choose one of the following:
   BIO 2410 (1) Genetics Lab (Pre/Co: BIO 2400/2700) OR BIO 2610 (1) Cell Biology Lab (Pre: MAT 1025; Pre/Co: BIO 2600)

   C. Biology Electives in the Areas (15 semester hours) – Students MUST choose one [WID] course. Students may not count a course more than once.

      1. Evolution/Ecology or Biodiversity Electives: Choose one (3-4 hours)
      BIO 2000 (4) Introduction to Botany
      BIO 3302 (4) Ecology
      BIO 3312 (3) Environmental Studies [WID] (Pre: ENG 2001)
      BIO 3315 (3) Conservation Biology [WID] (Pre: ENG 2001)
      BIO 4551 (4) Ornithology
      BIO 4556 (4) Mycology
      BIO 4558 (3) Taxonomy of the Fleshy Fungi
      BIO 4560 (4) Herpetology
      BIO 4571 (4) Plant/Insect Interactions in Terrestrial Ecosys

      2. Cellular/Subcellular or Anatomy & Physiology Electives: Choose 11-12 s.h. not chosen above to bring total hours in AREA II-C to 15 s.h.
      BIO 2410 (1) Genetics Laboratory (Pre/Co: BIO 2400/2700)
      BIO 3301 (4) Human Sys PhD [WID] (Pre: CHE 2201/2101; ENG 2001)
      BIO 3314 (3) Comparative Vertebrate Zoo [WID] (Pre: ENG 2001)
      BIO 4555 (4) Plant Physiology (Pre: CHE 1102 & 1120)
      BIO 4564 (4) Microscopy
      BIO 4569 (4) Invertebrate Zoology

      D. Required cognate courses: 34 semester hours
      Chemistry
      CHE 1101/1110 (4) Intro. Chemistry I & lab
      CHE 1102/1120 (4) Intro. Chemistry II & lab (Pre: CHE 1101/1110)
      CHE 2201/2203 (4) Organic Chemistry I & lab (Pre: CHE 1102)
      CHE 2202/2204 (4) Organic Chem II & lab (Pre: CHE 2201/2203 w/C-)
      CHE 4580 (3) Biochemistry I (Pre: CHE 2101 or 2201)

      Physics
      PHY 1103 (4) General Physics I (Co: MAT 1020 or 1025)
      PHY 1104 (4) General Physics II (Pre: PHY 1103)

      Mathematics
      MAT 1110 (4) Calculus w/ Analytical Geom. I (Pre: MAT 1025 w/C-)
      STT 2810 (3) Introduction to Statistics (Pre: MAT 1010)

   III. MINOR (optional)

IV. ELECTIVES (taken to total a minimum of 128 hours for the degree) ........................................................................................................................................68
   2 semester hours of free electives must be outside the major discipline.

2012-2013 (Revised 01/2016)