

B. S. Biology (BIO)*College: Arts & Science***DEGREE REQUIREMENTS**

Course requirements for all UNCW degrees include: (1) Basic Studies, (2) specific major requirements, and (3) sufficient elective hours for a combined total of a minimum of 124 hours.

(1) BASIC STUDIES (45 semester hours)

See Basic Studies sheet and/or information on the WEB at <http://www.uncw.edu/uc/basicstudies.htm>

(2) MAJOR REQUIREMENTS - BIO (Minimum 70 hours)

***This program is designed to meet the needs of BIO majors who may wish to pursue further education in graduate school in BIO or professional schools in the health sciences. The sequence of courses conforms to entrance requirements prescribed in publications of the Association of American Medical Colleges, the American Association of Dental Schools, and the Council on Optometric Education of the American Optometric Association. Working closely with an advisor, a student may select elective courses tailored to individual needs as listed below:*

Check when complete:

- _____ *+¹BIO 204 Principles of Biology: Cells (4)
 _____ *+¹BIO 205 Principles of Biology: Plant (4)
 _____ *+¹BIO 206 Principles of Biology: Animals (4)
 _____ *²BIO 325 or *²340 or *²345 or +BIO *240-241 Molecular Biology of the Cell (3+1) or Plant Physiology (4) or Animal Physiology (3+1) or Anatomy and Physiology (4-4) (for prerequisites, see catalogue)
 _____ *²BIO 335 Genetics (3) BIOL 335 Lab (1) Prerequisite: BIO 204 (With BIO 366 meets **Computer Competency Requirement**)
 _____ *²BIO 366 Ecology (3) BIOL 366 Lab (1) (With BIO 335 meets **Computer Competency Requirement**)
 _____ ²BIO _____ **Choose at least 15 hours of courses numbered higher than 299.
 _____ ²BIO _____ ****Pre-health Professional:** BIO *315, *316, 320, *325, 371, *415, *425, 459, *465
 _____ ²BIO _____ ****Clinical Laboratory Sciences:** BIO 320 and *425 are required; BIO *325, 371, *465
 _____ ²BIO _____ ****Conservation BIO:** BIO *311, *313, *314, *318, *356, *357, 358, *368, 430, *452, *456, 466, *475, 482
 _____ ²BIO 495 Seminar (1-3) Prerequisite: Junior or senior standing and consent of instructor (Meets **Oral Communication Competency Requirement**)
 _____ *+CHM 101 General Chemistry (4)
 _____ *+CHM 102 General Chemistry (4) Prerequisite: CHM 101
 _____ *CHM 211-*212 or *CHM 211 and *²BIO 465 Organic Chemistry (4-4) or Organic Chem (4) and Biochem (4)
 _____ *+PHY 101-102 Elementary College Physics (4-4)
 _____ +MAT 151 Basic Calculus with Applications (3) Prerequisite: MAT 111, 112, or 115 or placement or MAT 161 Calculus w/ Analytical Geometry (4) Prerequisite: MAT 112 or 115 or placement
 _____ +STT 215 Introduction to Statistics (3) Prerequisite: MAT 111, or 115

NOTE: Students planning to attend graduate school are also encouraged to take *CHM 235; MAT 152 or 162; CSC 112, 121. Students interested in health professional schools should visit <http://people.uncw.edu/ballardt> and review the advising manual posted there.

¹ Students may declare a major in BIO after completion of 30 hours and a GPA of 2.50 or higher in two BIO lab courses, preferably BIO 204 or 205 or 206.

² A "C" (2.00) or better average is required in all BIO courses above 299

* These courses either include a lab or require a corequisite lab + May also be used to satisfy Basic Studies requirements

(3) ELECTIVES

_____ Elective hours to equal a minimum of 124 hours

Requirements to declare PRE-BIO: Completion of 30 semester hours.

Requirements to declare BIO: Completion of two BIO lab courses, preferably BIO 204 or 205 or 206, with an average of 2.50 or higher.

For further information see the BIO WEB site: <http://www.uncw.edu/bio> and <http://www.uncw.edu/catalogue/documents/catalogue.pdf>

B. S. Biology (BIO)

(Teacher Licensure Option)

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(1) BASIC STUDIES (45 semester hours)

See Basic Studies sheet and/or information on the WEB at <http://www.uncw.edu/uc/basicstudies.htm>

(2) MAJOR REQUIREMENTS - BIO (Minimum 74-75 hours + Teacher Licensure [if selected])

Check when complete:

- _____ *+¹BIO 204 Principles of Biology: Cells (4)
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 _____ *²BIO 325 or *²340 or *²345 or +BIO *240-241 Molecular Biology of the Cell (4) or Plant Physiology (4) or Animal Physiology (4) or Anatomy and Physiology (4-4) (for prerequisites, see catalogue)
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 _____ *²BIO 366 Ecology (3) BIOL 366 Lab (1) (Meets **Computer Competency Requirement**)
 _____ ²BIO _____ At least 15 hours of courses numbered higher than 299.
 _____ ²BIO _____
 _____ ²BIO _____
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 _____ *+PHY 101-102 Elementary College Physics (4-4)
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 _____ +STT 215 Introduction to Statistics (3) Prerequisite: MAT 111, or 115

****Teacher Licensure:** In addition to completing the requirements for a degree in biology or marine biology and the other requirements of the Teacher Education Program, the following courses are required for licensure: BIO 160 or BIO 335 and BIOL 335, BIO 190 or 425, BIO 315, BIO 325 and BIO 325L or BIO 340 or BIO 345 and BIOL 345, BIO 366 and BIOL 366; GLY 101 or 150, and PHY 101 or 105. Additionally to earn Secondary Science Licensure students must select at least 21 hours from 3 physical science areas. A minimum of 2 courses from each discipline, including PHY 260, is required. For information on the Teacher Education Program admissions criteria and the courses required for licensure in North Carolina, see the Watson School of Education section of the catalogue or the Watson School of Education WEB site. Students planning to pursue licensure should apply to the Watson School of Education as soon as admissions requirements are met (typically in the sophomore year) and plan their programs in regular consultation with their advisors. Teacher licensure requirements are established at the state level and may be changed by the state at any time.

NOTE: Students planning to attend graduate school are encouraged to take *CHM 235; MAT 152 or 162; CSC 112, 121. Students interested in health professional schools should visit <http://people.uncw.edu/ballardt> and review the advising manual posted.

¹ Students may declare a major in BIO after completion of 30 hours and a GPA of 2.50 or higher in two BIO lab courses, preferably BIO 204 or 205 or 206.

² A "C" (2.00) or better average is required in all BIO courses above 299

* These courses either include a lab or require a corequisite lab

+ May also be used to satisfy Basic Studies requirements

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BIOLOGY COURSES

- BIO 105. Concepts of Modern Biology** (4)
BIO 140. Human Physiology (3) **BIOL 140. Lab** (1)
BIO 150. Humans and Ecology (3)
BIO 160. Genetics in Human Affairs (3)
BIO 170. Biology of the Sea (3)
BIO 180. Plants and the Environment (3)
BIO 190. Microbes and Human Society (3)
BIO 204, 205, 206. Core courses for BIO majors
- BIO 204. Principles of Biology: Cells** (4)
BIO 205. Principles of Biology: Plant (4)
BIO 206. Principles of Biology: Animals (4)
BIO 240-241. Human Anatomy and Physiology (4-4)
BIO 246. Microbiology of Human Diseases (4)
 Prerequisite: BIO 240
BIO 291. Introductory Research (1-3) Prerequisite:
 Freshman or sophomore standing and consent of
 instructor and department chair
- BIO 311. Plant Morphology** (4) Prerequisite: BIO 205
BIO 312. Marine Botany (4) Prerequisite: BIO 205
BIO 313. Marine Phycology (4) Prerequisite: BIO 205
BIO 314. Mycology (3) **BIOL 314. Lab** (1) Prerequisite:
 BIO 204
BIO 315. Comparative Vertebrate Anatomy (4) Prerequisite:
 BIO 206
BIO 316. Vertebrate Embryology (4) Prerequisite: BIO 206
BIO 318. Invertebrate Zoology (4) Prerequisite: BIO 206
BIO 320. Immunology (3) Prerequisite: BIO 204
BIO 325. Molecular Biology of the Cell (3) **BIOL 325. Lab**
 (1) Prerequisite: BIO 204 and CHM 211
BIO 335. Genetics (3) **BIOL 335 Lab** (1)
 Prerequisite: BIO 204
BIO 340. Plant Physiology (4) Prerequisite: BIO 204 and
 CHM 102
BIO 345. Animal Physiology (3) **BIO 345L. Lab** (1)
 Prerequisite: BIO 204 and CHM 102
BIO 356. Vertebrate Natural History (4)
 Prerequisite: BIO 206
BIO 357. Ichthyology (3) **BIOL 457. Lab** (1)
 Prerequisite: BIO 206
BIO 358. Marine Mammals (3) Prerequisite: BIO 206
BIO 362. Marine Biology (4) Prerequisite: BIO 205 and 206
BIO 366. Ecology (3) **BIOL 366. Lab** (1)
 Prerequisite: BIO 205 and 206
BIO 368. Behavioral Ecology (3) Prerequisite: BIO 206
BIO 371. Human Fungal Diseases (1) Prerequisite: BIO 204
BIO 380. Mariculture (3) Prerequisite: BIO 335 w/ lab or
 BIO 362 or BIO 366 w/ lab
BIO 415. Vertebrate Histology (4) Prerequisite: BIO 206
BIO 425. Microbiology (4) Prerequisite: BIO 204 and
 junior status
BIO 430. (ANT 430) Evolutionary Biology (3)
 Prerequisite: BIO 335
BIO 434. Coastal Marine Ecology (3) Prerequisite: BIO 366
BIO 452. Mammalogy (4) Prerequisite: BIO 206
BIO 455. Field Methods in Marine Mammology (3)
 Prerequisite: BIO 206 and consent of instructor
BIO 456. Ornithology (4) Prerequisite: BIO 206
- BIO 458. Fisheries Biology** (4) Prerequisite or corequisite:
 BIO 357, STT 215, or consent of instructor
BIO 459. Endocrinology (3) Prerequisites: BIO 206
 and CHM 212
BIO 460. Limnology (3) **BIOL 460. Lab** (1)
 Prerequisite: BIO 204 and CHM 102 and junior status
BIO 462. Deep Sea Biology (3) Prerequisite: BIO 362
BIO 465. Biochemistry (3) **BIOL 465. Lab** (1)
 Prerequisite: BIO 204 and CHM 211 and junior
 status
BIO 466. Conservation Biology (3) Prerequisite: BIO 335,
 366, and an additional 17 hrs in BIO
BIO 471. Phytoplankton (4) Prerequisite: BIO 205, junior
 status or consent of instructor
**BIO 474. Comparative Morphology of Vascular
 Plants** (4) Prerequisite: BIO 205
BIO 475. Plant Taxonomy (4) Prerequisite: BIO 205
BIO 478. Global Environmental Problems (3)
 Prerequisite: BIO 204 or CHM 102 or EVS 195
 and junior status
BIO 480. Field Studies in Biology (1-6)
 Prerequisite: BIO 205, 206, and consent of
 instructor
BIO 482. Wildlife Ecology (3) Prerequisite: 6 hrs upper
 level BIO
BIO 483. Biology of Crustaceans (3) **BIOL 483. Lab** (1)
 Prerequisites: BIO 206 and BIO 366
BIO 484. Methods in Biological Research (1)
BIO 485. Special Topics in Advanced Biology (1-6)
BIO 486. Advanced Topoics in Mariculture (3)
 Prerequisite: BIO 380
**BIO 487. (GLY 458/588) Introduction to Coastal
 Management** (4) Prerequisite: Junior standing or
 consent of instructors
BIO 488. (EVS 488/588) Forensic Environmental Science (3)
 Prerequisite: CHM 102 or equivalent and junior
 status
BIO 491. Directed Individual Study (1-3) Prerequisite:
 Overall GPA 2.00, junior or senior standing, and
 consent of instructor, dept chair, and dean
BIO 493. Biology Laboratory Teaching Practicum (1-4)
 Prerequisites: Junior standing, consent of
 instructor, and a 3.00 cumulative GPA.
BIO 495. Seminar (1-3) Prerequisite: Junior or senior
 standing and consent of instructor
BIO 498. Internship in Biological Sciences (3-12)
 Prerequisites: Junior or senior majors within the
 BIO department, minimum 2.0 overall GPA, and
 consent of instructor
BIO 499. Honors work in Biology (2-3) Prerequisite:
 Second semester junior or senior standing