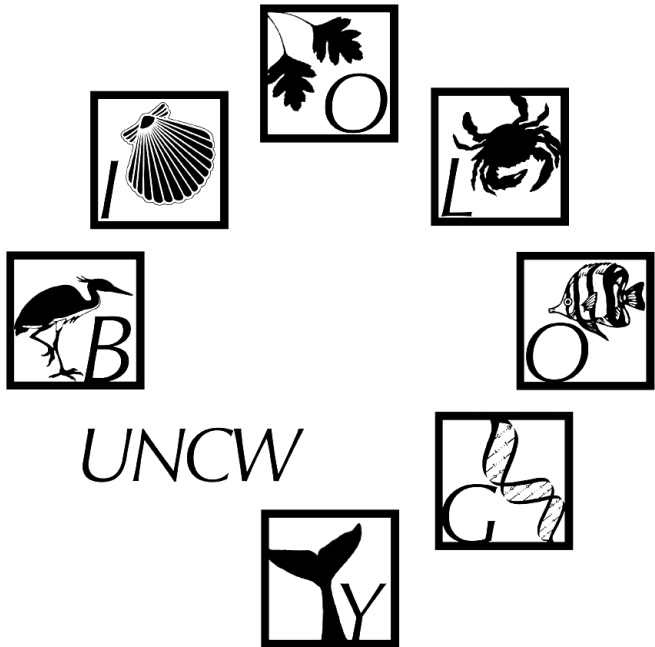


BIOLOGY & MARINE BIOLOGY



THANK YOU FOR YOUR INTEREST

in the Department of Biology and Marine Biology at the University of North Carolina Wilmington!

We support an excellent undergraduate program, with an emphasis on hands-on involvement of undergraduates in research and other activities, a nationally recognized master's program and a Ph.D. in marine biology. Our geographic location in southeastern North Carolina allows students and faculty to take advantage of the wide array of local coastal and offshore habitats, as well as the facilities of the Center for Marine Science located six miles from the main university campus.

The degrees we offer are: B.S. Biology, B.S. Marine Biology, B.A. Biology, M.S. Biology, M.S. Marine Biology and Ph.D. Marine Biology

A major emphasis of our undergraduate degree programs is applied learning, which is student involvement in research activities, internships and volunteering. Teaching and research with well-planned laboratories and field studies create opportunities for students to learn and to practice skills necessary for professional development in the sciences.

We have an active faculty involved in a variety of research interests including molecular biology and systematics, coastal and estuarine ecology, invertebrate and vertebrate biology, and environmental and conservation biology. Our faculty encourage student participation in research through a variety of means, including honors work, directed independent research projects, internships and student research assistantships. These research activities have resulted in opportunities for students to present at scientific meetings, to contribute to research publications co-authored by faculty and to participate in faculty-led, cutting-edge research projects.

I hope you find the following information and the Web sites referenced in this booklet helpful.

Martin H. Posey
Professor and Chair

Facts about UNCW and the Department of Biology and Marine Biology

UNCW Enrollment

Fall 2008	12,195
Undergraduate	10,989
Graduate	1,206
Female	58%
Minority	11%

Costs 2009 - 10

(Undergraduate, living on campus)

In-state	\$16,100
Tuition & Fees	\$4,966
Room & Board	\$7,690
Out-of-state	\$26,982
Tuition & Fees	\$15,848
Room & Board	\$7,690
Other Expenses	\$3,444

More than 1,500 of our students come from 42 states, and our international student population continues to grow.

2009 - 10 Freshmen Statistics

Middle 50% SAT: 1120-1240 (critical reading and math only)

Average ACT composite: 25 (with writing portion)

Average high school GPA: 3.79 weighted (on a 4.0 scale)

On average, the UNCW Office of Admission receives approximately 10,000 applications for 1,950 first-year spaces each fall.

2008 - 09 Transfer Statistics

Average GPA: 3.18 (on a 4.0 scale)

Average Transferable (Semester) Hours: 45

On average, the UNCW Office of Admission receives approximately 3,500 applications (fall and spring combined) for 1,300 transfer spaces each academic year.

Biology and Marine Biology Undergraduate Enrollment

Fall 2008	809
Biology	332
Pre-Biology	163
Marine Biology	199
Pre-Marine Biology	85
Teach Certificate	4
Female	61.4%
Male	38.6%
Avg GPA of May Graduates	3.10
Avg GPA of Dec. Graduates	3.08

Financial Assistance

The UNCW Office of Financial Aid administers more than \$72 million in loans, grants, scholarships, work study programs and student employment opportunities. The Department of Biology and Marine Biology scholarships and awards are determined at the end of each spring semester for students who have an established GPA with UNCW. The funds are for the upcoming academic year and appointed according to availability of funds. Only student's grade point average established at UNCW will be used to determine merit-based scholarships.

Admission to UNCW is the first step to becoming a major in biology or marine biology.

UNCW admits students as freshmen (first-year students) and transfer students. Prospective students and their families are invited to visit UNCW to learn more about the positive atmosphere that faculty, staff and students create throughout the campus. University tours conducted by students are offered weekdays, except holidays, (weather permitting) at 10 a.m. and 2 p.m. and originate at James Hall. For undergraduate admissions information, contact 910.962.3243 or admissions@uncw.edu or visit www.uncw.edu/admissions.

The Department of Biology and Marine Biology does not provide tours of our facilities, although some of our on-campus teaching labs and lecture rooms are occasionally included in the campus tour. If prospective students and their family members wish to talk with a representative in our department, contact our department to schedule an appointment (prior to the day of the campus visit) with the academic advising and internship coordinator, our chair or another department representative. Our phone is 910.962.3487. Visitors are welcome to walk through Dobo Hall and Friday Hall. These are the buildings in which we teach our courses and labs. The Center for Marine Science (CMS) is a research facility and does not offer tours. Some of our faculty have research labs located in CMS, but the majority of our faculty and their research labs are located in Dobo and Friday Halls.

Please note that admission to the university does not constitute admission to a major in the Department of Biology and Marine Biology. Admission requirements must be met before a student can become a major in biology or marine biology.

Frequently Asked Questions

How can I be admitted to the Department of Biology and Marine Biology?

Whether as a first-year student or a transfer student, you must first be accepted to the University of North Carolina Wilmington. Second, you will need to complete 24 semester credit hours, have at least a 2.0 overall GPA and complete BIO 201 and BIO 202 with at least a “C” (2.0 GPA) or better in those two courses. As a transfer student you must have credit in two laboratory biology courses equivalent to UNCW’s BIO 201 and 202 and at least a “C” in those two courses.

Who teaches lectures?

Most lectures are taught by permanent faculty who hold a Ph.D. in their field. A few lectures are taught by qualified adjunct faculty who bring a unique expertise (e.g. M.D. and D.V.M.).

Are the faculty accessible to students?

Yes. Faculty have posted office hours and welcome students with questions. Faculty are also advisors to our majors.

How can I get experience relevant to my major or career interest?

Applied learning is a requirement for our majors to graduate. Ways to fulfill applied learning are through research with faculty, internships, teaching or volunteering.

Some of our students have interned with:

- NC Aquarium
- Baltimore Aquarium
- Karen Beasley Sea Turtle Hospital
- College Road Animal Hospital
- UNCW Marine Quest
- Living Seas/Walt Disney World
- Dolphin Quest
- Focus Ranch
- NC Coastal Federation

However, most opportunities can be found by working with our own faculty.

Are there jobs for biology and marine biology graduates?

Yes. Career services on campus, www.uncw.edu/career, is a valuable resource for our students and alumni.

What have our alumni done after graduation?

Employability for our alumni has been enhanced with good college grades, experience and a willingness to relocate. A solid background in chemistry, mathematics, computers and communication skills is also helpful in finding employment.

Many of our graduates work for local, state or federal agencies and private sector. Job sources include:

- State and federal fisheries agencies
- State and local water quality agencies
- US/Army Corps of Engineers
- Public schools
- The Environmental Protection Agency
- National Oceanographic and Atmospheric Administration
- Fish and Wildlife Services
- Smithsonian Institute
- Colleges/universities
- Sales/marketing of medical, scientific, pharmaceutical, agricultural products
- Commercial fishing
- Scientific foundations
- Medical research corporations
- Hospitals and health care facilities
- Dentist and doctor practices
- Aquaculture
- Port and harbor trade facilities
- Marinas

- Marine and coastal consulting firms
- Aquaria and museums
- Shipbuilding
- Sport fishing
- Seafood processing and research
- Merchant Marine
- Marine tourist attractions
- Medical practices and supporting services
- Pharmacy
- Veterinary science
- Conservation organizations
- Agricultural corporations & research entities
- Education (schools)
- Nature centers
- State and federal parks
- Ecotourism
- And others...

Some of graduates have opened their own businesses.
Examples include:

- Aquaculture farms
- Consulting businesses
- Coastal guesthouse proprietorship
- Science writing/illustration/film making

Degree Requirements for a B.S. Biology, B.S. Marine Biology and B. A. Biology

To earn a degree in biology or marine biology, a student must complete 124 hours of credit in basic studies and one of the degree programs outlined in the following program sheets. Students must meet the requirement of applied learning through either honors work, directed independent study involving hands-on experience in any science department, internship at a site approved by UNCW and the Department of Biology and Marine Biology that provides experience in the life sciences, teaching practicum in an approved site, field studies in life sciences volunteer experience in a life sciences field or BIO 495L Seminar.

As a cost savings, UNCW is not printing catalogues, but providing it online at www.uncw.edu/catalogue where course descriptions can be found.

The following is an example of a curriculum that would lead to completion of your degree in four year, though many variations are possible.

Freshman Year (31 hours)

BIO 201 or 202 (any order)
CHM 101 and 102
English basic studies
PED 101
Social Behavior Science
basic studies
(MBY majors should take GLY 150
during the first year)

Sophomore Year (31 hours)

300 level biology
required courses/labs, if
BIO 201 and 202 are complete
CHM 211/lab for MBY majors
CHM 211-212/labs for BIO majors
7-8 hours in basic studies

Junior Year (31 hours)

300-400 level biology courses/labs
PHY 101 and 102, if not completed
Minor or elective courses
Internship, research or
volunteer experience

Senior Year (31 hours)

BIO 495
Remaining 300-400 level biology
courses/labs
Completion of a minor or
choose electives

B.S. Biology (70 hours minimum)

- BIO 201 (Principles of Bio: Cell) (4)
BIO 202 (Principles of Bio: Biodiversity) (4)
BIO 335 (Genetics) (3)
BIOL 335 (Genetics Lab) (1)

Physiology choices: BIO 240 (Anatomy & Physiology I) (4)
BIO 241 (Anatomy & Physiology II) (4)

Note: If BIO 240-241 are chosen to fulfill this requirement, both must be completed.

- BIO 345 (Animal Physiology) (3)
BIOL 345 (Animal Physiology Lab) (1)
BIO 325 (Molecular Biology of the Cell) (3)
BIO 325 (Molecular Biology of the Cell Lab) (1)
BIO 340 (Plant Physiology) (4)

- BIO 366 (Ecology) (3)
BIOL 366 (Ecology Lab) (1)
BIO 495 (Biology Seminar) (1)

Biology electives (19 hours) BIO courses numbered >299

Collateral requirements (30 hours)

- CHM 101 (General Chemistry) (4)
CHM 102 (General Chemistry) (4)
CHM 211 (Organic Chemistry) (3)
CHML 211 (Organic Chemistry Lab) (1)
CHM 212 (Organic Chemistry) (3)
CHML 212 (Organic Chemistry Lab) (1)
PHY 101 (Elementary College Physics) (4)
PHY 102 (Elementary College Physics) (4)
MAT 151 or MAT 161 (3) or (4) (Calculus)
STT 215 (Introduction to Statistics) (3)

A "C" (2.00 GPA), or better, average on biology courses numbered above 299 is required for graduation.

Biology elective suggestions for various career tracks:

Pre-health professional: BIO 315, 316, 320, 325, 371, 415, 425, 459, 465

Conservation biology: BIO 311, 313, 314, 318, 356, 357, 358, 368, 430, 452, 456, 466, 475, 482

Beginning in fall 2010, a terrestrial and freshwater option in the B.S. biology degree program will be offered.

B.S. Marine Biology (75 hours minimum)

- BIO 201 (Principals of Biology: Cells) (4)
BIO 202 (Principals of Biology: Biodiversity) (4)
BIO 335 (Genetics) (3)
BIOL 335 (Genetics Lab) (1)

Physiology choices:

- BIO 325 (Molecular Biology of the Cell) (3)
BIOL 325 (Molecular Biology of the Cell Lab) (1)
BIO 345 (Animal Physiology) (3)
BIOL 345 (Animal Physiology Lab) (1)
BIO 340 (Plant Physiology) (4)

BIO 362 (Marine Biology) (4)
BIO 366 (Ecology) (3)
BIOL 366 (Ecology Lab) (1)
BIO 495 (Biology Seminar) (1)

Required marine biology electives (8 hours)

- BIO 318 (Invertebrate Zoology) (4)
BIO 357 (Ichthyology) (3)
BIOL 357 (Ichthyology Lab) (1)
BIO 312 (Marine Botany) (4)
BIO 313 (Marine Phycology) (4)

Biology and marine biology electives (13 hours)

Collateral requirements (29 hours)

- CHM 101 (General Chemistry) (4)
CHM 102 (General Chemistry) (4)
CHM 211 (Organic Chemistry) (3)
CHML211 (Organic Chemistry Lab) (1)
PHY 101 (Elementary College Physics) (4)
PHY 102 (Elementary College Physics) (4)
MAT 151 or MAT 161 (Calculus) (3) or (4)
STT 215 (Introduction to Statistics) (3)
GLY 150 (Introduction to Oceanography) (3)

B.A. Degree in Biology (51 hours)

BIO 201 (Principles of Biology: Cells) (4)

BIO 202 (Principles of Biology: Biodiversity) (4)

Collateral requirements: (8 hours)

CHM 101 (4)

CHM 102 (4)

The above requirements should be taken early in the program of study.

Requirement: BIO 495 Seminar (1-3 hours)

Prerequisite: Admitted as BIO or MBY major and junior or senior status, or consent of instructor.

Biology electives: A minimum of 34 hours chosen from biology courses numbered above 299 and not used to satisfy other requirements.

Teacher Licensure Requirements

Students who plan to become licensed teachers in the North Carolina public schools must complete the university's basic studies expectations, all requirements in the major and be formally admitted to the Watson School of Education. Requirements for admission are listed in the UNCW Undergraduate Catalogue, and also are listed on the Watson School's Web site at www.uncw.edu/ed. For the secondary education program, completion of SEC 200, SEC 210 and SEC 220 is required, all with a grade of "C" (2.0) or better.

In addition to the requirements for the academic major, the secondary education courses listed below are required for licensure. A grade of "C" or better must be earned in the following courses:

SEC 200 (Teaching, Schools and a Global Society) (3)

SEC 210 (Diverse Learners in Secondary Schools) (3)

SEC 220 (Field Experience Block 1) (2)

Teacher Licensure Requirements (continued)

NOTE: The courses listed below require admission to the Watson School of Education.

- SEC 300 (Curriculum Design, Technology and Learning Assessment) (3)
 - SEC 310 (Reading and Literacy in the Secondary School) (3)
 - SEC 320 (Field Experience Block 2) (2)
 - SEC 406 (Theory & Practice in Teaching Secondary Science 9-12) (4)
 - SEC 421 (Field Experience Block 3: Secondary Teaching Science) (1)
 - SEC 410 (ESL Topics for Secondary Teachers) (3)
 - SEC 422 (Field Experience Block 3: ESL) (1)
 - SEC 431 (Practicum) (12)
 - SEC 430 (Seminar – Leadership, Reflection and Management Practices) (3)
- Total = 40 semester hours

Basic Studies Requirements

All students must complete 45 semester hours in specific courses selected from a diverse list of offerings from the disciplines within the university. For a complete list of courses for basic studies search our Web site at www.uncw.edu/catalogue.

English composition (6 hours) (ENG 101 and ENG 201, ENG 103)

Physical education (2 hours) (PED 101)

Humanities (12-18 hours) disciplines include literature (3), history (3), philosophy (3) and language (3).

Fine Arts (3-9 hours) disciplines include art, communication, drama and music.

Natural sciences (7-12 hours, including at least one laboratory course).

Basic Studies Requirements (continued)

Disciplines include anthropology (210), biology, chemistry, geography, geology, environmental science (EVS 195), physical education (216, 217) and physics.

Mathematical sciences (3-8 hours)

Social and behavioral sciences (6-12 hours) disciplines include anthropology, communications, criminal justice, economics, geography, political science, psychology, social work and sociology

Interdisciplinary perspectives (0-6 hours) courses include honors seminars and introduction to science, the humanities and society.

Faculty and Staff

- Brian S. Arbogast** Assistant Professor: Conservation Biology
- J. Craig Bailey** Associate Professor: Photosynthetic Eukaryotes
- Timothy A. Ballard** Assistant Chair/Undergraduate Coordinator & Associate Professor:
Human Anatomy
- Stuart R. Borrett** Assistant Professor: Quantitative Ecology
- Lawrence B. Cahoon** Professor: Biological Oceanography
- Brian R. Chapman** Professor: Vertebrate Ecology and Management of Rare and
Endangered Species with Emphasis on Birds and Bats
- Ileana E. Clavijo** Associate Professor: Fisheries Biology
- Richard M. Dillaman** Professor: Animal Morphology, Electron Microscopy
- Diane M. B. Dodd** Assistant Professor: General and Population Genetics
- Michael J. Durako** Professor: Coastal Plant Biology
- Steven D. Emslie** Professor: Marine Ornithology, Paleoecology
- Christopher M. Finelli** Associate Professor: Biological Oceanography
- Arthur R. Frampton, Jr** Assistant Professor: Virology
- Rodney D. Hagley** Full-time Lecturer: Introductory Biology Courses,
Microbiology of Human Diseases
- Paul E. Hosier** Professor: Plant Ecology, Ecology of Coastal Vegetation
- Stephen T. Kinsey** Professor: Comparative Biochemistry and Physiology
- Heather N. Koopman** Associate Professor: Marine Lipid Physiology
- Thomas E. Lankford** Associate Professor: Ichthyology
- Sean C. Lema** Assistant Professor: Integrative and Comparative Biology
- Zachary T. Long** Assistant Professor: Community Ecology
- Michael A. McCartney** Associate Professor: Molecular Ecology and
Evolution of Marine Invertebrates and Fishes
- Diane L. Melroy** Full-time Lecturer: Introductory Biology Courses
- Leslie J. Moore** Lab Coordinator/Lecturer
- Cathy B. Olson** Undergraduate Advising Coordinator
- D. Ann Pabst** Assistant Chair/Graduate Coordinator & Professor:
Marine Mammalogy
- Joseph R. Pawlik** Professor: Marine Chemical Ecology
- Martin H. Posey** Department Chair & Professor: Estuarine Ecology
- Linda F. Potts** Senior Lecturer: Introductory Biology Courses, Human Anatomy
and Physiology
- Sonja J. Pyott** Assistant Professor: Neurobiology
- Robert D. Roer** Dean of Graduate School and Research & Professor:
Animal Physiology, Biomineralization

Sentiel A. Rommel..... Lecturer
Richard A. Satterlie..... Frank Hawkins Kenan Distinguished Professor: Neurophysiology
Frederick S. Scharf Associate Professor: Fisheries Biology
Thomas H. Shafer..... Professor: Developmental Biology
Ronald K. Sizemore..... Associate Director for Academic Planning, Center for Marine Science
& Professor: Marine Microbiology
Bongkeun Song..... Assistant Professor: Marine Microbiology
Amanda L. Southwood Associate Professor: Animal Physiology
Ann E. Stapleton..... Associate Professor: Plant Physiology
Alina M. Szmant..... Professor: Coral Biology
Alison R. Taylor Assistant Professor: Cell Biology
Carmelo R. Tomas Professor: Marine Phytoplankton
Marcel van Tuinen..... Associate Professor: Vertebrate Evolutionary Biology
Wm. David Webster..... Associate Dean for Graduate Studies, Research, and
Infrastructure & Professor and Curator of Mammals: Mammalogy
Ami E. Wilbur Associate Professor: Shellfish Genetics and Mariculture

Research Faculty and Research Associates

Troy D. Alphin..... Research Associate: Estuarine Ecology
D. Wilson Freshwater Research Analyst: Marine Botany
Michael A. Mallin Research Professor: Estuarine Ecology
William A. McLellan Research Associate: Marine Mammalogy
Wade O. Watanabe Research Professor: Aquaculture and Mariculture
Andrew Westgate..... Research Associate: Physiology

Staff

Carol J. Russell Administrative Specialist
Lori T. Leitch Administrative Associate
Debbie A. Cronin Administrative Associate
Tracie J. Chadwick..... Graduate Secretary/Administrative Associate
Eleanor Bussman..... Receptionist
D. Mark Gay Manager, Electron Microscopy Center
Jennifer Messer..... Kresge Greenhouse Manager