

Advanced Island Ecology for Educators

Carolina Beach State Park Summer Session One

Instructors:

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COURSE DESCRIPTION

Through interaction with resources and experts, students will develop readily accessible, web-based materials through engagement in field based exploration of plants and animals of coastal ecosystems and environmental issues. Students are expected to demonstrate breadth and depth of content knowledge and research necessary for pedagogical content implementation for effective instructional decision making. **Prerequisites:** None

COURSE OBJECTIVES

- Exploring comprehensive science concepts surrounding coastal and barrier island ecology.
- Collaborating with content area experts about weekly topics while out in the field.
- Identifying and researching terrestrial and aquatic flora and fauna of the local barrier islands.
- Examining the geological aspects and phenomena and how they affect barrier islands.
- Investigating the history of Fort Fisher and Carolina Beach and any associated environmental impacts.
- Researching technologies effective in the delivery of K-12 science content.
- Articulating ideas for teaching science to enhance your expertise in the selection, development and/or implementation of curricular materials resources, and the selection of instructional strategies.
- Researching current trends in formal and/or informal science education.
- Examining an organization that focuses on historical and ecological connections and has been influential in the conservation of the island.
- Presenting research with a focus on the historical and ecological connections on the island by utilizing cutting edge technologies.



COURSE OUTLINE

On the Monday beginning each week, the instructors will directly assign a classification of organism or an ecological/environmental issue. Students will be asked to collaborate with guest speakers and their class peers. Students will be out in the field much of the week collecting information and researching a topic of interest reflecting the assignment. Students will develop web-based products or an academic paper meeting the requirements. Each weekly assignment will be due the following Tuesday. Our home-base will be the classroom at the visitor center at Carolina Beach State Park. CB PARK Address: 1010 State Park Road, PO Box 475, Carolina Beach, NC 28428 <http://www.ncparks.gov/Visit/parks/cabe/main.php>

Please refer to the class calendar and schedule for specific meeting days, times, and locations.

Opening Session: Introductions; Review of Course Syllabus; Expectations and timeline of course; Weekly assignments, final exam, and presentation; the learning cycle lesson plan; safety precautions while in the field; and short orientation hike.

Week 1: Orientation to coastal and barrier island ecology. Explore and investigate the biological and ecological impacts of local terrestrial fauna (such as salamanders, white tailed deer, fox, snakes, insects, alligators, etc.).

Week 2: Explore and investigate the biological and ecological impacts of local terrestrial (such as long leaf pine, Venus fly traps, pitcher plants, and live oaks) and/or aquatic flora (seaweed, alga, and coastal grasses).

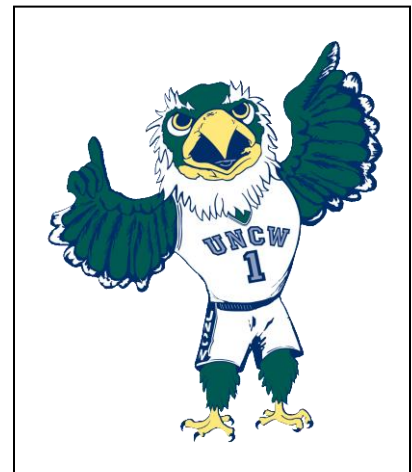
Week 3: Explore and investigate the biological and ecological impacts of local aquatic fauna (such as blue crab, periwinkle, mullet, skates, sea turtles, etc.).

Week 4: Examine coastal and barrier island geology/ecology including zones of barrier islands (open water, intertidal zone, dunes, over wash, and salt marsh).

Week 5: Investigate the history of Fort Fisher/Carolina Beach and other barrier islands and impacts on environmental science.

University Mission Statement

The University of North Carolina at Wilmington is a public comprehensive university dedicated to excellence in teaching, scholarship and artistic achievement, and service. Through the College of Arts and Sciences, the professional schools, and the graduate school, the university seeks to stimulate intellectual curiosity, imagination, rational thinking, and thoughtful expression in a broad range of disciplines and professional fields. Of prime importance is the university's commitment to undergraduate teaching. The humanities, the arts, the natural and mathematical sciences, and the behavioral and social sciences comprise the core of the undergraduate curriculum. Strong graduate programs complement the undergraduate curriculum. The university considers scholarly practice, research, and creative activities essential for effective learning.



UNCW Learning Goals

The four categories of student learning articulated in the university's [mission](#)—creative inquiry, critical thinking, thoughtful expression and responsible citizenship—give rise to eight learning goals for every baccalaureate graduate of UNCW. These goals capture the skills and expected student learning outcomes needed to ensure breadth of learning characteristic of a liberal education (the goal of a general education program).

WCE MISSION STATEMENT

The mission of the Watson College of Education is to develop knowledgeable and proficient education professionals dedicated to improving schools and society. We address this mission by:

- Providing academically rigorous programs;
- Producing and using meaningful scholarship;
- Partnering with schools, organizations and diverse communities;
- Advancing the profession.

REQUIRED READINGS

Resource Text: The Battle for North Carolina's Coast by Stanley R. Riggs (2011). University of North Carolina Press. ISBN 978-0-8078-3486-2.

Field Notebook required for notes during hikes and lectures.

Online Template Platform: <https://sites.google.com/>

Readings (and online resources): <http://people.uncw.edu/kubaskod/courses.html>

Teacher Journals:

- The National Science Teachers Association publishes these journals for science educators. Their mission is to promote excellence and innovation in science teaching and learning. I've found the organization to be the "flagship" community for science practitioners and this journal is specifically designed to serve as a forum for secondary science educators to exchange ideas and teaching methods.
 - The Science Teacher - <http://www.nsta.org/highschool/>
 - Science Scope - <http://www.nsta.org/middleschool/>
 - Science and Children - <http://www.nsta.org/elementaryschool/>

Research Journals: Journal of Research in Science Teaching, Science Education, International Journal of Science Education, Journal of Elementary Science Education, School Science and Mathematics, Journal of Environmental Education, The Earth Scientist, and International Journal of Environmental and Science Education.

Facebook Link to [Island Ecology for Educators Page](#)

OTHER OPTIONAL RESOURCES

- Louv, R. (2005). *Last Child in the Woods*. Algonquin Books of Chapel Hill. (selected chapters)
- North Carolina Department of Public Instruction (NCDPI)
 - Students will use this web page to “serve as a curriculum terminal from which you can travel to specific goals and objectives based on discipline and grade level. This service provides a convenient way for teachers, administrators, and parents to verify the instructional objectives of the Common Core and Essential Standards at a given grade and subject area.”
 - <http://www.ncpublicschools.org/acre/standards/new-standards/#science>
- North Carolina Professional Teaching Standards
 - The North Carolina Professional Teaching Standards are the basis for teacher preparation, teacher evaluation, and professional development. Each of these standards will include the skills and knowledge needed for the 21st century teaching and learning.
 - <http://www.ncpublicschools.org/docs/effectiveness-model/ncees/standards/prof-teach-standards.pdf>
- AAAS, (1993). *Benchmarks for Science Literacy*. Oxford University Press, New York.
 - www.project2061.org/tools/benchol/bolframe.htm
- National Research Council. (1996). *National Science Education Standards*. Washington, DC: National Academy Press.
 - <http://www.nap.edu/readingroom/books/nse/>

ATTENDANCE AND PARTICIPATION

Active participation and promptness with work are expected for all class sessions, assignments, and discussions. Students are expected to be active participants in this class—that is, to complete all readings, writing and activity assignments. Each anticipated absence must be discussed with the instructor in advance. Each unanticipated absence must be discussed with the instructor immediately upon return to class. In the case of excessive absences, your grade may be lowered at the discretion of the instructor.

Attendance is required by all students. After the second absence and upon each additional absence, the final grade will be reduced by ONE letter grade. For instance, a student having missed three classes can only attain a grade of ‘B’ upon successful completion of all course work.

- 1-2 absences = no grade deduction (Grade of “A”, still possible)
- 3-4 absences = one letter grade deduction (Grade of “B”, at best)
- 4-5 absences = two letter grade deduction (Grade of “C”, at best)
- More than 5 absences = please withdraw from the class (Grade of “F”)

In the case of an absence, it is the student’s responsibility to find out what work was missed, and to make work up on his/her own time. I recommend finding a “study buddy” that would be willing to share with you all vital information.

1. Students are not to be **late for class**. On most days, class will begin promptly at 9:00 AM and end by 11:00 AM (check schedule for special time changes for some class sessions).
2. **Complete** all assignments as detailed in the requirements section. Any assignment submitted after the due date may result in a major (30%) grade deduction unless there is a documented emergency. It is the students’ responsibility to make sure all assignments are submitted on time! NO assignments will be accepted later than one week after the due date unless there is a documented emergency. Being absent from class the day an assignment is due is NO excuse for not turning in the assignment. If there is an illness or emergency, be sure to contact the instructor prior to missing class and arrange to have any assignment submitted prior to the missed class.

3. **Adhere** strictly to the UNCW Honor Code (See Student Handbook, Code of Student Life)
<http://uncw.edu/odos/documents/cosl-current.pdf>.
4. **Avoid Plagiarism!** Visit the University Learning Center: Writing Services or go to
<http://uncw.edu/ulc/writing/avoidplagiarism.html>.

ASSIGNMENTS AND COURSE REQUIREMENTS

Point system: Each week's assignment will be comprised of 25 points and the final exam worth 25 points for a total of 175 points. The final paper and associated video for week 5 is worth 50 points

Using web-based templates designed by the instructors; students will utilize technology (FLIP camera/video and digital images) to study and document each week's assigned topic. For each week, the students will:

- a) research the biological and ecological implications of their assigned topic of the week (photographs, video and environmental impacts),
- b) create a science lesson plan to accompany their topic using the inquiry based five E lesson plan format,
- c) create student created integrated web pages, and
- d) analyze and summarize current trends in science education research journals associated with the pedagogy or strategy utilized in the 5 E lesson plan.

Grade	Equivalent Percentage (.5 and above – round up)
A	92-100%
A-	90-91
B+	88-89
B	82-87
B-	80-81
C+	78-79
C	71-77
F	< 70

Assignment:	Topic	Point Value	Due Date
Week 1 – Web-based Template	Local Terrestrial Fauna	25	Wed, 5/27
Week 2 – Web-based Template	Local Terrestrial/Aquatic Flora	25	Tues, 6/2
Week 3 – Web-based Template	Local Aquatic Fauna	25	Tues, 6/9
Week 4 – Web-based Template	Coastal/Barrier Island Factors in Ecosystems	25	Tues, 6/16
Week 5 – Research Paper and Video	History and Culture of Barrier Islands	50	Thurs, 6/18
Final Exam		25	Thurs, 6/18

While out in the field:

- **Follow all rules and regulations of Carolina Beach State Park.**
- **It is highly recommended that you wear comfortable clothes, closed toe shoes, sunscreen, bug spray, and a hat!!!**

POLICY OF NONDISCRIMINATION

The policy at The University of North Carolina Wilmington is consistent with the ADA and Section 504. UNCW is open and accessible to students with disabilities. We are committed to providing assistance to enable qualified students to accomplish their educational goals as well as assuring equal opportunity to derive all of the benefits of campus life.

Pages on the UNCW's website strive to meet current accessibility standards. To learn more, visit UNCW's Web Accessibility page

If you have difficulty accessing any information from the Disability Resource Center's home page or any web pages throughout our site please contact us by phone at 910-962-7555, TDD at 800-735-2962 or by email at helmusa@uncw.edu and we will provide alternatives.

UNCW CARE intervenes on a broad spectrum of violent behaviors, including sexual assault, relationship abuse, stalking and harassment. We offer a comprehensive variety of violence prevention and relationship education programs, trainings, and educational campaigns to the UNCW campus. We respond to students who have been victimized, as well as those affected by someone else's experience with abuse or assault, by providing supportive services, including crisis response, individual advocacy and coordination with both on-campus and off-campus resources.

The CARE Office is located on the second floor of DePaolo Hall, across from the Student Health Center, in the CARE/CROSSROADS suite. CARE can be contacted at 910-962-CARE. Emergency or after-hours consultation is also available by calling the CARE responder at 910-512-4821.

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