

2009 Summer Ventures in Science and Mathematics Course Descriptions
The University of North Carolina Wilmington

Archaeology in the Cape Fear

This course will introduce students to the science of humankind's past – archaeology. After a brief introduction to the science and methods of archaeologists at the UNCW Archaeology Laboratory, students will conduct fieldwork by surveying, excavating and recording archaeological remains of either Fort Anderson or historic Brunswick Town. Excavation units/trenches will be established and students will work in small groups recovering artifacts, mapping features, photographing finds, and recording field notes daily in individual notebooks. Students will then return to the UNCW Archaeology Laboratory to process and analyze finds, interpret data collected, and write and present a report on their findings. *Instructors: Dr. Scott Simmons, Mr. Craig Rankin.*

Coastal Geology

Students in this course will conduct field and laboratory studies using geological techniques throughout the unique environment of the Atlantic coastline in the southeastern United States. Measurement and analysis of the materials and the geologic and environmental processes that form the diverse beaches, islands, lagoons, channels, and tidal creeks in New Hanover County will be utilized to examine specific questions, problems or issues. Students will observe and discuss processes characteristic of barrier islands and inshore waters, while learning pertinent techniques such as air photo/map interpretation, surveying, profiling, sediment and water sample collection and analysis techniques, biological collecting techniques, and statistical analyses. Students will have latitude to create projects that fit their interest within the time frame of this program. Results and observation of the student investigation will be presented in a professional forum at the end of the program. *Instructors: Dr Michael Smith, Mr. Steve Clark.*

Coastal Physical Geography

Students in this course will conduct field studies of the geomorphology, biogeography, and climatology of the beaches, islands, lagoons, channels and tidal creeks of the southeastern United States. Measurement of geomorphic, biotic, and micro-climate variables will be combined with field mapping, aerial photography analysis, and computer mapping to analyze the physical geography of southeastern North Carolina. Students will observe and discuss economic development and its relation to the physical landscape of New Hanover County. Specific methodologies and analytical techniques to be included in the course are air photo/map interpretation, field surveying and profiling, meteorological instrumentation, vegetation surveys, sediment analysis, and statistical analyses. Students will design final projects to fit their interests and curiosities. *Instructors: Dr. Doug Gamble, Ms. Jessica Croson.*

Computer Applications in Physics

This course will involve mathematical models of physical phenomena using electronic data acquisition and computer analysis of experimental data. Research topics include mechanics, electricity and magnetism, thermodynamics, optics, sound, and properties of materials. Students will have access to modern data gathering devices as well as computer-controlled instrumentation such as oscilloscopes, sound frequency analyzers, and digital multi-meters. *Instructors: Dr. Gabriel Lugo, Mr. Gary Cavender.*