OBJECTIVE: Introduction to life in the oceans, including the major groups of organisms and common ecosystems.


PREREQUISITES: High School Biology.

CLASS FORMAT: Lectures

READING: Introduction to Marine Biology by G. Karleskint, Jr.
OBJECTIVE: An introduction to the invertebrate members of the animal kingdom. Lectures will present a phylogenetic survey of the invertebrates with emphasis on functional anatomy, natural history, and evolutionary affinities of the various groups. Audio-visual aids will be used to supplement lecture material.

PREREQUISITES: BIOL 1100 or MARS 2201

READINGS: Invertebrates, Brusca and Brusca Invertebrates, Zoology: A Laboratory Manual, Wallace and Taylor

LABORATORY /FIELD EXPERIENCE: Weekly laboratory exercises will familiarize students with the practical anatomy of the major invertebrate groups. Live material will be used, when possible, for behavioral and physiological observations. Occasional field trips will be directed towards field natural history and identification of local specimens.

EVALUATION: Grading will be based on 3 hour exams, 3 quizzes and a laboratory notebook. This course is design to introduce the invertebrates to BIOL, ENVL, and MARS majors.
OBJECTIVE  This course examines the fishing industry, the science involved with estimating and predicting fish population’s abundance, fecundity and age growth relationships so that these data are available for informed management and regulatory decision making.


PREREQUISITES:  Math 1100

CLASS FORMAT:  Lecture/Discussion


PAPERS/PROJECTS:  Conducting real and hypothetical population estimates.

EVALUATION:  Exams (90%) and Class Participation (10%)
OBJECTIVES: This course is designed to introduce students into the amazing variety of marine algae and salt marsh plants. Because these organisms are able to make food from light, they are the basis of the marine food web, and important both ecologically and economically.

COURSE CONTENT: We will concentrate on the algae (seaweeds and phytoplankton), but also included some (higher) plants found in salt marshes and bays. Reading and lectures format supplement weekly labs and several field trips to local jetties and salt marshes. Emphasis is on learning 1) the features of the main groups of algae (blue-green, red, brown, and green algae, as well as diatoms, and dinoflagellates); 2) how these plants live; basic biological processes such as photosynthesis, growth and reproduction; 3) identification of local algae and salt marsh plants (through labs and collection); and, 4) how the marine plants are adapted to their particular marine habitat (e.g. intertidal, planktonic). 5) We will also discuss applied uses of marine plants, such as that in human food and industry, in mariculture ("farming the sea"), and as indicators of pollution.

PREREQUISITES: Intended for MARS Majors; POI for non-MARS majors, depending on space availability.

ATTENDANCE: Mandatory

CLASS FORMAT: Lecture, lab and field trips

READINGS: Graham & Wilcox The Algae ; Hillson, Field Guide to Algae Newcomb-Jones, Saltmarsh plants; Reserve material on saltmarsh plants (Dawes, Marine Botany).

LABORATORY/FIELD EXPERIENCE: Weekly lab or field trips.

EVALUATION: Lab notebooks, lab assignments and three exams.
OBJECTIVES AND COURSE CONTENT: A course designed to familiarize the student with aspects of the five extant classes of fishes, with emphasis on taxonomy, ecology, and behavior. Extensive identification of east coast U.S. freshwater and marine fishes in the laboratory sessions will familiarize the student with some of the local and more common species, with external fish anatomy, and with some of the pertinent literature in the field. Indoor laboratory work early in the semester will be supplemented by field trips later in the semester. Two reports are required: (1) One on the species collected on our trips and (2) One on a species or genus or family of your and instructor’s choice.

PREREQUISITES: BIOL 1100 and one BIOL field course or equivalent, or see instructor.

ATTENDANCE: Required and recorded for each meeting.

CLASS FORMAT: Standard faculty lecturing.

LABORATORY/FIELD EXPERIENCE: Laboratory exercises will be a major part of the course. Field trips are required to study local fishes in their natural habitats. Extensive identification in the laboratory of specimens collected, and of other species.

READINGS: To be assigned; two texts and two field guides required.

PAPERS/PROJECTS: Two thorough, well-organized, and well written reports are required.

EVALUATION: Based on a maximum possible total of 1,000 points, as follows:
Lecture Test 1 = (200 points), Final Lecture Exam = (200 points), Laboratory practical exam = (200 points), Attendance, Attitude, etc. = (200 points), Report 1 = (100 points), Report 2 = (100 Points)
OBJECTIVE: This laboratory course provides hands-on experience with physical, chemical and geological oceanographic techniques. The course emphasizes data collection, analysis and interpretation of results.

COURSE CONTENT: Physical oceanographic components may include seawater density, water mass mixing, waves, tides and solar radiation. Chemical oceanographic components may cover chlorinity, pH and alkalinity, dissolved oxygen and nutrient determinations. The geological components may address bathymetry, ocean crustal models and sedimentation.

PREREQUISITES: MARS 2202, CHEM 2110 and CHEM 2115. Pre- or corequisites: at least 8 credits in MATH or PHYS.

ATTENDANCE: Required. Course meets at Nacote Creek Field Station and students are responsible for their own transportation.

CLASS FORMAT: Laboratory exercises.

EXPERIENCE: Exercises are conducted in the laboratory during the class period. If possible, limited field work in Great Bay or adjacent coastal waters may be incorporated.

LAB MANUAL: Tentatively: Laboratory Exercises in Oceanography, by Pipkin, Gorsline, Casey and Hammond.

EVALUATION: Based on weekly laboratory exercises, laboratory practical(s) and/or final report, attendance and conduct.
MARS 3396-001
Chemical Oceanography
Gordon Grguric
TR 8:30AM-10:20AM
Q2
Spring 2006

OBJECTIVE: The course is designed to introduce students to Chemical Oceanography, a scientific Discipline that deals with sources, sinks, speciation etc. of chemical elements in the ocean. The Objective of the course is to apply chemical principles that students have learned to seawater and examine the chemistry of several types of marine environments. For every group of elements covered, their chemical behavior and the principles underlying this behavior will be studied.

COURSE CONTENT: Some of the topics covered include: major, minor and trace elements in the ocean; seawater alkalinity/carbonate system; redox chemistry of marine sediments; use of radioisotopes in chemical oceanography. Additional topics include the chemistry of hydrothermal vents and an overview of marine organic chemistry.

PREREQUISITES: MARS 2202 and CHEM, CHEM 2120 or CHEM 2140 recommended, but not required.

CLASS FORMAT: Lectures, with a few videos throughout the semester. Discussions of several relevant scientific papers.


EVALUATION: Written examinations and homework.
MARS 3415
Preparation Tropical Marine Biology
Matthew Landau
001 T 4:30PM-5:25PM
002 T 6:00PM-6:55PM
SPRING 2006

OBJECTIVES: A one-credit preview of summer courses MARS 3416, and BIOL 3416 which includes
field and boat work in Florida waters (from tropical hammocks to coral reefs of the Florida Keys).
*NOTE: A passing grade in MARS 3415 does not guarantee placement in MARS 3416 which is
based on total college credits earned and instructor evaluation.

COURSE CONTENT: An overview of marine biological environments in Florida coastal
environments. Discussion of field, lab, and boat procedures.

PREREQUISITES: Either MARS 1100 OR MARS 2201 or at least 8 credits of biological courses.

ATTENDANCE: Required.

CLASS FORMAT: Lecture.

EVALUATION: Based on one test.