HUMAN INTERACTIONS with the COASTAL OCEAN (11:628:221, 3 credits)

Instructors
  Professor Robert Chant
  Professor Karl Nordstrom
  Professor Gary Taghon

Prerequisites
  None

Course Materials
  All reading assignments will be available through course website

Topics
  Eutrophication effects on the coastal ocean
  Waste discharge to the coastal ocean
  Water quality and water resources I
  Resources and alternative energy sources from the coastal ocean
  Case study: the Mississippi delta
  Oil in the ocean
  Climate change: physical and chemical effects on the ocean
  Climate change: effects on marine life
  Living resources: finfish
  Living resources: aquaculture
  Estuarine margins and marshes
  Constructing buildings and infrastructure
  Sea level rise, storms and coastal hazards
  Protecting eroding coasts, restoring degraded habitats

Course Learning Goals and Assessment
  The Learning Goals for the Marine Science program are posted on our website at
  http://marine.rutgers.edu/main/academics/undergraduate/program-description. The learning goals for
  this course apply to Program Learning Goal 1 (master the basic biological, chemical, physical, and
  geological principles of marine science), Goal 3 (show evidence of scientific literacy, and to communicate
  the information effectively both orally and in writing), Goal 5 (evaluate contemporary global issues and
  the ethics of how the ocean’s resources are used).
  Students completing this course will be able to:

Goal A. Identify, interpret, and utilize scientific principles and data to evaluate human effects on the
  coastal marine environment
  Instructional activities: lectures, assigned readings, in-class discussions
  Assessment method: performance on exams, in-class participation
Goal B. Show how personal experience and past learning contribute to evaluating issues related to conserving and restoring resources
Instructional activities: lectures, assigned readings, in-class discussions
Assessment method: performance on exams, in-class participation

Goal C. Evaluate the consequences of alternative human actions and weigh the advantages and disadvantages of potential solutions
Instructional activities: lectures, assigned readings, in-class discussions
Assessment method: performance on exams, in-class participation

Goal D. Formulate and justify scientific arguments orally and in writing by identifying and critically assessing a theme related to contemporary interactions between humans and the coastal ocean. The project must take a multidisciplinary approach, include a scientific and management/policy perspective, and discuss competing stake-holder issues and ethical issues.
Instructional activities: guidelines on research and writing in the sciences, guidelines on effective oral presentations
Assessment method: performance on first draft of written essay, incorporation of instructors’ comments in final draft, performance on oral presentation

Grading
Three exams 20% each
Written essay 25%
Oral presentation 10%
Class participation 5%