AQUACULTURE (11:628:317, 3 credits)

Instructors
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Prerequisites
   Special permission number, contact Instructors

Course Materials
   None; reading material and reference books are provided

Fees
   $200 per student to cover dorm ($150) and other expenses ($50)

Topics
   Introduction to aquaculture/basic requirements
   United States aquaculture
   Asian aquaculture
   Global aquaculture
   Seaweeds and phytoplankton culture
   Molluscan shellfish culture
   Crustacean aquaculture
   Major finfish/Salmon/Catfish/Tilapia culture
   Koi and ornamental/aquarium aquaculture
   Nutrition and growth
   Disease
   Genetics
   Sanitation
   Aquaculture economics

Field Trips
   Rutgers Aquaculture Innovation Center
   Cape Shore Oyster Hatchery
   An active oyster farm
   An active koi farm
   Shellfish packing/shucking houses

Laboratory Projects
   Recirculating systems: general construction and maintenance
   Shellfish and/or finfish culture: spawn and/or raise animals and planktonic food
   Disease diagnostics: gross pathology, histology, RFTM assay, condition index
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 communicate the information effectively both orally and in writing), and 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. Evaluate major aquaculture species and culture practice worldwide
   Instructional Activities: lectures, assigned readings, in-class discussions
   Assessment Method: performance on exams and assignments

Goal B. Make use of basic aquaculture practices and related techniques through laboratory exercises
   Instructional Activities: laboratory exercises, lectures, in-class discussions
   Assessment Method: lab reports and worksheets

Goal C. Evaluate the use of GMOs and Biotechnology in aquaculture
   Instructional Activities: field trips, lectures, labs, in-class discussions
   Assessment Method: performance on exams, reports and assignments

Goal D. Discuss how aquaculture (including use of non-native species) impacts the environment
   Instructional Activities: field trips, lectures, in-class discussions
   Assessment Method: performance on exams, reports and assignments

Grading
   Participation and Discussion 10%
   Lab reports, homework, worksheets 25%
   Final Exam 40%
   Term-paper 25%