MAR 150 Marine Studies Institute

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Fall Semester
Thursday 1:10-4:40 pm
JE 314 and Field Sites

Course Description:

MAR 150 Marine Studies Institute will familiarize students with coastal marine environments, with particular emphasis on Long Island Sound, using a combination of lecture, laboratory and field settings. The course will focus on physical, biological and chemical factors affecting the distribution of marine organisms in various coastal environments including marshes, rocky intertidal zones, sandy beaches and estuaries. The laboratory/field work will introduce students to data collection and data analysis and to provide skills to allow students to write laboratory reports. This coarse will also examine human impacts on these coastal environments. There are no pre-requisites.

Specific Objectives:

1) To examine major marine habitats in Long Island Sound and the major biotic and abiotic factors controlling the distribution of marine organisms.
2) To familiarize students with scientific, social and economic factors surrounding human impacts on coastal resources.
3) To improve scientific writing skills and to support group interaction and teamwork skills in a cooperative educational environment.

Learner Outcomes:

At the completion of this course, students will be able to:

1) Identify organisms and unique characteristics of coastal marine habitats including beaches, rocky intertidal zones and salt marshes;
2) Describe the chemical and physical processes and properties that affect the distribution of marine organisms within these habitats;
3) Recognize human impacts to water quality and living marine resources in Long Island Sound and evaluate possible solutions to the problems identified.

Office Hours:

Tuesday 3:00-5:00 pm; Wednesday 11:30-12:30 pm; Friday 11:00-1:00 pm
Office hours outside of scheduled times may be requested by an individual or group by email or phone.

Class Policies: Class attendance is mandatory and students are required to be at class or the predetermined field-site **on time and prepared**. Students are responsible for lecture material and field activities that are not in the assigned text but will be included on exams. Written assignments must be submitted on-time. Students should also be aware of the SCSU policy concerning academic honesty (SCSU Student Handbook). Violators of this policy will not receive credit for the assignment.

If you need course adaptations or accommodations due to a disability, if you have emergency medical information to share with me, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible.

Grading: Examinations will include two exams; a mid-term exam and a final exam. The final exam will be partially cumulative. Both exams will cover material presented in class lectures and material presented during the field and laboratory activities. Class participation includes attendance at all class meetings and activities. Participation also includes asking questions and participating in class discussions. Three brief laboratory/field reports are also required (described below).

Mid-term Exam (1.5 hour length)	25%
Final Exam (1.5 hour length)	25%
Class Participation	20%
Laboratory/Field Reports	30%

Make-up exams will be considered only in instances of documented emergencies.

Modes of Instruction:

This course will consist of lectures, demonstrations, viewing of videotapes, "hands on" laboratory activities and field-based activities. Students will work individually and in small groups to make observations and collect data during the laboratory exercises and field visits.

Laboratory/Field Reports:

All laboratory reports will be typed and double spaced using a 12-point font (Times preferred) and one-inch margins. Number the text pages. Tables, Figures and Literature Cited do not count as text pages. Late reports will be penalized five percent of the grade for each **day** the report is overdue.

Laboratory reports (3) will be submitted following each field site visit and should include a written description of the site, site location (map), observations of plants and animals made in the field (drawings, figures, classification) and completed data collection forms.

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Topic	Location
Introduction to the Marine Environment Long Island Sound (Features and Processes)	JE 314
Intertidal Environments I: Salt Marsh	Field/Lab (West Haven)
National Beach Clean-Up (Voluntary Activity)	Field (West Haven)
Biotic and Abiotic Factors (tides, salinity, light temperature, nutrients)	JE 314
Intertidal Environments II: Rocky Shore	Field/Lab (Outer Island)
Intertidal Environments/Algae/Aquaria	JE 314
Intertidal Environments III: Sandy Beaches	Field/Lab (West Haven)
Primary Production, Plankton and Plants	
Mid-Term Exam/Aquaria Collections	JE 314
Marine Animals	JE 314
Fishing and Fisheries	JE 314
Long Island Sound Environments	Norwalk Aquarium
Coastal Pollution Human Impacts: Marine Debris	JE 314
Thanksgiving (no class)	
Human Impacts: Eutrophication Sewage Treatment Plant	JE 314 (West Haven)
Human Impacts: What happened to LIS lobsters?	JE 314
Final Exam (During Finals Week)	

MAR 150 Marine Studies Institute Reading Packet - Required

Schubel, J.R. 1987. Long Island Sound in Time and Space: An overview. Long Island Sound: Issues, Resources, Status and Management Seminar Proceedings. January 1987. pp. 1-21.

Garrison, T. 2000. Water/Tides. Chapters 6/10. Essentials of Oceanography, Second Edition.

Strieb, M. 1993. Trophic Relationships and the Habitats of Long Island Sound. Assessment of Living Marine Resources. January 1993. The Long Island Sound Study. pp. 1-36.

Garrison, T. 2000. Chapter 4. Primary Productivity, Plankton, and Plants. Essentials of Oceanography, Second Edition. pp. 332-359.

Garrison, T. 2000. Chapter 15. Marine Animals. Essentials of Oceanography, Second Edition. pp. 362-399.

Bush, M.B. 2000. Chapter 11, Making Connections: Fisheries. Ecology of a Changing Planet, Second Edition. pp. 158-175.

Strieb, M. 1993. The Effects of the Priority Water Quality Problems on the Living Marine Resources of Long Island Sound. Assessment of Living Marine Resources. January 1993. The Long Island Sound Study. pp. 37-76.

Additional References:

Holland, A.F. and T.T. Polgar. 1976. Seasonal Changes in the Structure of an Intertidal Community. Marine Biology, 37: 341-348.

McLachlan, A. and I. Turner. 1994. The Interstitial Environment of Sandy Beaches. Marine Ecology, 177-211.

Redfield, A.C. 1972. Development of a New England Salt Marsh. Ecological Monographs, 42: 201-237.

Bertness, M.D. 1984. Ribbed Mussels and *Spartina altiniflora*: Production in a New England Salt Marsh. Ecology, 65: 1794-1807.

Salt Marsh Plants of Connecticut,* Bulletin #25, Tidal Marsh Invertebrates of Connecticut,* Bulletin #20, Tidal Marshes of Long Island Sound,* Bulletin #34

*Available at a cost of $1-3/Bulletin from the Connecticut College Arboretum, Campus Box 5201, 270 Mohegan Avenue, New London CT, 06320-4196. http://aboretum.conncoll.edu/pubs.html