

Biology Department

Memorial University of Newfoundland

COURSES AT THE BONNE BAY MARINE STATION, SUMMER 2003

Contact for all courses: Biology Department,
Memorial University (MUN),
St. John's, NL, A1B 3X9,

Dr. Bob Hooper, Director,
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Cost per course: Canadian students \$297.00 per course. International students \$660.00 per course. This fee includes tuition and registration but not accommodation or incidental costs.

Deposits: A reservation deposit of \$100.00 is required (payable prior to registration). Upon arrival in Bonne Bay this \$100.00 can become a refundable security deposit. Avoidable damage to the premises, floater suits or other equipment will be deducted from this deposit. Responsible students always receive a full refund.

Registration: Contact Dr. Hooper by email or in person during the winter semester. Non-Memorial University students are advised to contact Dr. Hooper as early as possible. Priority will be given to students taking all or most of the summer courses. Deadline for registration is normally mid-March.

Accommodation: For accommodation advice, please call Dr. Hooper. The rate for shared accommodation in our new residence is \$80.00 per week, not including meals. Students are not required to stay at the Station.

Prerequisites: Memorial University students must follow University Calendar regulations and will generally have completed some basic 2nd year courses, especially B2600 (Ecology); outside students are expected to have a second year university background.

Enrollment limits: Minimum 12, maximum 30 students for each course.

Courses:

1. Biology 3710 - The Aquatic Environment

Instructors: Dr. Evan Edinger, MUN

Dates: May 11-24, 2003

Credit: 3 credit hours

Deadline for write-ups: May 31, 2003

Textbook: TBA

Description: The role of geological, oceanographic, chemical and physical processes in marine and aquatic biological habitats is reviewed. The course will include the following topics: ocean basins and tectonic processes, major oceans and seas, hydrothermal circulation, deep-sea sediments, hydrology, temperature, salinity, density, circulation and currents in lakes and oceans, seasonal processes, waves and tides, solar radiation, heat budgets, glaciation and ice-caps, sea ice, ocean chemistry, nutrients and productivity, chemical cycles, gases in water, carbonate equilibria, shoreline geomorphology, sediment transport, beach processes, estuaries and fjords, tropical carbonates, marine pollution and environmental quality, climate change. Most lecture subjects will be examined in the diverse marine systems and the fossil oceans of the Gros Morne National Park region.

Evaluation: Quiz 20%, Notebook 15%, Paper 30 % Final Exam 35%.

2. Biology 3709 - Marine Principles and Techniques

Instructors: Dr. R. Hooper

Dates: June 1-14, 2003

Credit: 3 credit hours

Deadline for write-ups: June 21, 2003

Textbook: TBA

Description: This is an introduction to marine systems. Students are expected to have at least a second year university background in biology. The structure of various components and the interactions between the key organisms and their habitats are stressed. The course is structured as a sequence of daily modules, each stressing a component including: hydrography, water masses, water chemistry, phytoplankton, zooplankton, saltmarshes, tidal flats, rocky shores, sedimentary communities, marine birds and mammals, marine pollution, fisheries management, etc. Students will learn the names of important Newfoundland marine species and their ecological roles.

Evaluation: Quiz 20%, project 30%, notebook 10%, final 40%

3. Biology 3714 Estuarine Fish Ecology Field Course

Instructor: Dr. J. Wroblewski, Biology, MUN

Dates: June 22 to July 5, 2003

Credit: 3 credit hours

Deadline for write-ups: July 12, 2003

Textbook: TBA

Description: Community structure, function and distribution of northern coastal fishes in fjords and estuarine environments. Emphasis on sampling, field techniques, taxonomy, quantitative characterization, adaptations and habitat relationships. A comparative approach will contrast fish communities from other areas.

Evaluation: Quiz 20%, Research project 25%, Notebook 10%, Presentation 10%, Final 35%

4. B3711 - The Ecology of Open Waters – Newfoundland Marine Ecology

Instructors: Dr. Paul Snelgrove, Canada Research Chair, OSC/Biology
Dr. Michele DuRand, Ocean Sciences Centre

Dates: July 13-26, 2003 **Credit:** 3 credit hours

Deadline for write-ups: August 2, 2003

Textbook: Levinton **Marine Biology**

Description:

In terms of the ecology of marine organisms, Newfoundland is uniquely positioned in the North Atlantic. Strongly seasonal environmental changes create an ecosystem that supports high productivity of organisms but that changes markedly during the year. In short, Newfoundland waters provide a superb natural laboratory in which to study the ecology of cold-water environments and the physical, chemical and geological factors that influence the cold-water species from bacteria to whales. The focus of the course will be the Newfoundland marine flora and fauna, and the unique adaptations of the organisms that live in Newfoundland waters. The course will be field intensive, with a moderate lecture component and a strong hands-on laboratory field component, where students will learn to identify organisms that live in coastal waters and how and why they change in time and space.

Evaluation: Quiz 20%, research project 25%, notebook 10%, presentation 10%, final exam 35%.

5. B4012 - Phycology – (Seaweed Biology and Ecology)

Instructor: Dr. Robert Hooper, MUN

Dates: August 4-17, 2003 **Credit:** 3 credit hours

Deadline for write-ups: Aug. 24, 2003

Textbook: TBA

Description: Virtually all of the seaweed and freshwater algal species of northeastern North America occur in the Bonne Bay area. The Arctic seaweeds found in Bonne Bay should prove particularly interesting to students from warmer climates. Freshwater habitats include limestone rivers and maerl lakes. The initial phase of the course will survey systematics and identification of seaweeds, with particular attention to living local seaweeds. The theme of the course will be seaweed ecology, physiology, economics and other aspects of Phycology. A field trip to southern Labrador (Strait of Belle Isle) will be offered, at a supplementary cost of c.\$100.00.

Evaluation: Quiz 20%, project 25%, notebook 15%, final exam 40%.

5. * Biology 3709 is offered (for a second time) as a fall (2003F) semester course from August 24 to Sept. 5, 2003. Please contact Bob Hooper at rhooper@mun.ca