

Graduate Module Outline

Title: Life history of commercial seaweeds in nature and in the laboratory

Instructor: David Garbary

Timing (month/year module will be offered): January to March 2010

Module Description:

A field and laboratory examination of the reproduction and life history of *Chondrus* and *Ascophyllum*. Field collections will be made to collect the reproductive phases of the two algae. Microscopy and fluorescent labeling of DNA will be used to show development of reproductive structures. Variation in life history phases of *Chondrus* will be demonstrated using chemical characterization of the carrageenan components. Collections will be made by the student on the Atlantic Coast and by the professor on the Gulf of St. Lawrence to provide experimental material. Microscopy and chemical analysis will be carried out in Antigonish.

Format:

Students will be exposed to basic techniques of fluorescence microscopy, photomicroscopy and processing of digital images. Experimental work will include resorcinol tests for carrageenan determination.

Method of Evaluation:

Two lab reports will be required. 1: an account of reproductive cytology of *Chondrus* and *Ascophyllum* based on laboratory microscopy (50%). 2: A report on the life history of *Chondrus* in recent and historical collections of *Chondrus* from Nova Scotia with historical collections provided by the professor (50%).

Prerequisites (list undergraduate courses required as prerequisites):

Undergraduate courses in organismal diversity and cell biology.