Course Syllabus Dr. Bill Stickle

Biology 3999 Undergraduate research

Summer Special Session July 19 –August 10, 2013 University of Alaska, Southeast, Juneau Alaska

Lab: 3-5:00 PM MTWThF - Anderson Building, field, and NMFS lab

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Office Hours: Class, Lab, Faculty Apartment as assigned by UAS - Building

Communication via Moodle: http:// Moodle.LSU.edu

**Catalog Description:** Laboratory Experiences in marine communities

**Required Textbook**: None; handouts will be provided

Evaluation:

Literature Review and Methods (July 22, 2013) 50

 First Draft including results and Discussion (By Aug.6,2013) 150

 Final Draft (By August 9, 2013) 200

 Total Points = 450

Grading Scale

A = 90-100% = 405-450 Points

B = 80-89% = 384-404 Points

C = 67-79% = 301-383 Points

D = 50-67% = 225-300 Points

F = < 50% = 0-224 Points

Research projects will be conducted by teams of students and written up in scientific paper format. Each group of students will consist of a maximum of 7 students. The research topics will relate to topics covered in lectures in Marine Communities and the Marine Communities laboratory. Students will know the research group to which they belong prior to the program.

Research projects are:

1. intertidal zonation of two species of limpets in southeastern Alaska- species, species interactions, abundance and size as a function of intertidal height
	1. Sites:

 Salinity stressed –Bridget Cove and Sunshine Cove

 West coast of Douglas Island

1. On the importance of marine derived nutrients to the freshwater phase of

Pacific salmon- fertilization from salmon carcasses

* 1. Nutrient analyses will be conducted through time at Sheep Creek:
	2. Sheep creek will be analyzed for the following nutrients, including: nitrate; Nitrite; Ammonium; Soluble reactive phosphorus
1. Mussel condition index as a function of habitat at the high and low end of their vertical distribution at:
	* + - 1. Salinity stressed – Bridget Cove
				2. Douglas Harbor
2. Investigate the physiological responses of two species of limpets, the masked limpet *Tectura persona* and the plate limpet *Tectura scutum*, to salinity stress.
	1. A. salinity tolerance
	2. Hemolymph versus seawater osmolality
	3. Percent osmolality
	4. Ninhydrin positive substances
3. Determine the patterns of variation of ambient salinity, temperature,

 dissolved oxygen as a function of intertidal height as a function of tidal

 rhythms on a rocky shore at Bridget Cove Alaska.