

## **Kelp Forest Ecology Summer 2014**

### **Principle Goals:**

1. To introduce students to the existing knowledge, hypotheses, and disputes regarding the components of kelp forest communities and the ecological interactions that influence their structure and dynamics.
2. To familiarize students with critically reading primary published literature in marine kelp forest ecology.
3. To familiarize students with local Alaska marine subtidal flora and fauna.
4. To give students an opportunity to work underwater.
5. To provide students with experience in doing ecological research of their own including: formulating questions, collecting and analyzing ecological data, writing reports based on such data, and giving and receiving critical feedback.
6. \*Graduate students will also be required to conduct their own research project and prepare a lecture on their research topic.

### **Grading:**

#### **Graduates**

Paper Discussions:	5
Lecture	10
Individual Project	20
Organism Exam	15
Sampling Paper	15
Final Exam	20
Herbarium	15

**Recommended Courses:** Invertebrate Zoology, Fish Biology, Ecology, Statistics

### **Recommended General Books:**

1. Coyer, J., D. Steller and J. Witman. 1999. A Guide to Methods in Underwater Research: The Underwater Catalog, Shoals Marine Lab.
2. Heine, J. N. 1999. Scientific Diving Techniques. Best Publishing Company. 225pp.

### **Recommended Organism Books:**

1. Gotshall, D. W. 1989. Pacific Coast Subtidal Marine Fishes. Sea Challengers Inc. 96pp.
2. Gotshall, D. W. and L. L. Laurent. 1979. Pacific Coast Subtidal Marine Invertebrates. Sea Challengers Inc. 107pp.
3. Kessler, D. W. 1985. Alaska's Saltwater Fishes and Other Sea Life. Alaska Northwest Publishing Co. 358pp.
4. O'Clair, R. M. and S. C. Lindstrom. 2000. North Pacific Seaweeds. Plant Press. Auke Bay, AK.

**\*\*All books will be available for you to borrow at the Kasitsna Bay Lab.**

**Course policies:**

Attendance is expected unless there is a good reason for the absence (illness or research-related travel). Students should contact the instructor prior to missing a class if possible. Plagiarism will not be tolerated in any form. Any paper that contains plagiarized material will receive a grade of zero, and may possibly be grounds for flunking the class. Be sure you understand what constitutes plagiarism. For an explanation of what constitutes plagiarism see:

<http://www.uaf.edu/library/instruction/handouts/Plagiarism.html>

**Support and Disability Services:**

The Office of Disability Services (203 WHIT 474-7043) implements the Americans with Disabilities Act and insures that UAF students have equal access to the campus and course materials. Students with disabilities can be assured that they will be provided with reasonable accommodation.

The class is a field course. Facilities at the lab are disability accessible. However, SCUBA diving excursions are required.

**Example Schedule:**

DATE	DAY	8 to 11 am	<i>italics are dives</i> noon-5 afternoon	Discussions 7 to ? evening
23-May	Fri	arrive lab		Meet and chat
24-May	Sat	Lecture: Kelp Forest Introduction	<i>check out beach dive</i> and Lecture: Sampling	<i>Boat check out dive, swaths (canopy kelp) and rugosity</i>
25-May	Sun	Lecture: Kelp Forest Organisms		Lab: Invertebrates and urchin lab
26-May	Mon	Lecture: Macroalgae		Lab: Invertebrate key
27-May	Tues	Lecture: Kelp Forests Around the World	<i>algal collection dive</i>	Lab: Green and brown algae
28-May	Wed	<i>algal collection dive/tag kelp</i>	Lab: Red algae	Lecture: Monitoring
29-May	Thurs	<i>permanent site sampling (PSS dive)</i>	PSS Lab	PSS Lab
30-May	Fri	<i>PSS dive</i>	PSS Lab	PSS Lab

31-May	Sat	PSS dive	PSS Lab	PSS Lab
1-Jun	Sun	finish PSS Lab	enter data	Paper Discussions (Kelp Forest Ecology)
2-Jun	Mon	off	<b>Organism Quiz</b>	Movie night... Blue Planet
3-Jun	Tues	off	<b>grad project presentation</b>	individual projects
4-Jun	Wed	individual projects	individual projects	Paper Discussions (Fish)
5-Jun	Thurs	<i>Deep dive</i>	<i>Experiment collections</i>	individual projects
6-Jun	Fri	<i>misc techniques: vertical vs horizontal, swaths or quads</i>	graph data	individual projects
7-Jun	Sat	individual projects	individual projects	Paper Discussions (Invertebrates)
8-Jun	Sun	<i>misc techniques: boulders: tops vs under</i>	graph data	individual projects
9-Jun	Mon	<i>misc techniques: holdfast collections</i>	holdfast lab	individual projects
10-Jun	Tues	individual projects	<i>misc techniques: tagging</i>	Paper Discussions (Macroalgae)
11-Jun	Wed	individual projects	<i>diversity dive</i>	individual projects
12-Jun	Thurs	individual projects	<b>Grad project presentation, All: herbariums due</b>	<b>All: PSS papers due</b>
13-Jun	Fri	clean lab/gear	<b>Final Exam</b>	<b>Grad: poster due.</b>
14-Jun	Sat	leave lab		