

Subject	Aquatic Plant Ecology (水圏植物生態学)	Day/Period	5 Semester 1st Quarter Tues./1st-2nd 6 Semester Tues./2nd	Object	AMB/JYPE
Instructor	M. Aoki (Associate Prof.)	Categories	Specialized Subjects	Preferable Participants	2nd,3rd-year & JYPE students
Position	Faculty of Agriculture (Graduate School of Agricultural Science)	Credits	2		
		Semester	5 & 6		
Subject Numbering	ABS-APS343E	Language Used in Course	English		
1. Class subject The ecology of giant kelp forests					
2. Object and summary of class This course provides the basic knowledge about the community ecology of marine kelps through the readings of some chapters related to the ecological topics in the book 'The biology and ecology of giant kelp forests' by Schiel & Foster (2015).					
3. Keywords Kelp forest, Sea urchin, Barren, Grazing, Population dynamics, Production, Rocky subtidal ecosystem, Phase shift Global warming					
4. Goal of study The goal is to understand the structure and function of marine kelp communities through the study of the ecology of giant kelp forests.					
5. Contents and progress schedule of class (1) Introduction (2) The abiotic environment-1: Substratum and sedimentation (3) The abiotic environment-2: Temperature, light and nutrient (4) The abiotic environment-3: Water motion (5) Dispersal and connectivity of populations-1: Demography and metapopulations (6) Dispersal and connectivity of populations-2: Reproductive output and source of propagules (7) Dispersal and connectivity of populations-3: Spore dispersal and recruitment windows (8) Session review-1 (9) Grazing in kelp communities-1: Kelp-sea urchin interactions (10) Grazing in kelp communities-2: Reversion of barrens to kelp habitat (11) Grazing in kelp communities-3: Other grazers in giant kelp communities (12) Predation and trophic cascades-1: Fish predation on grazers (13) Predation and trophic cascades-2: Lobster predation on grazers (14) Predation and trophic cascades-3: Sea otter predation on grazers (15) Session review-2					
6. Preparation Read the relevant chapters in the textbook in advance.					
7. Record end evaluation method Examination, report and attendance					
8. Textbook and references Reference texts: Schiel DR and Foster MS (2015) The biology and ecology of giant kelp forests. University of California Press					
9. Self study Review is required.					
10. Practical business					
11. In addition Office phone number: 022-757-4152 Mail address: masakazu.aoki.e6@tohoku.ac.jp					