

Course Name	Advanced: Field Bioscience in the Northern Biosphere		
Semester, Year	Second Semester, 2018	Number of Credits	2 credits
Course level	1000	Course Number	27111
Instructor(s) (Institution)	Yoichiro HOSHINO 北方生物圏フィールド科学センター (農場) Fuyuki SATOH 北方生物圏フィールド科学センター (札幌) Takashi SAITOH 北方生物圏フィールド科学センター (札幌) Hideaki SHIBATA 北方生物圏フィールド科学センター (札幌) Takayuki AZUMA 北方生物圏フィールド科学センター (植物園) Hiroko FUJITA 北方生物圏フィールド科学センター (植物園) Toshihiko YAMADA 北方生物圏フィールド科学センター (農場) Toshiyuki HIRATA 北方生物圏フィールド科学センター (農場) Chikako NAGASATO 北方生物圏フィールド科学センター (室蘭) Taizo MOTOMURA 北方生物圏フィールド科学センター (室蘭) Norishige YOTSUKURA 北方生物圏フィールド科学センター (忍路) Jun YAMAMOTO 北方生物圏フィールド科学センター (函館) Kazushi MIYAMOTO 北方生物圏フィールド科学センター (函館) Yoko MITANI 北方生物圏フィールド科学センター (函館)		
Course Objectives	To understand the field sciences on ecosystem conservation, sustainable bioproduction, biodiversity, and material cycling in a wide variety of fields including forest, farm, and aquatic environments, and to learn the most advanced field science in each research field.		
Course Goals	To understand both comfortable lives of human due to the rapid progress of scientific technology and serious problems of the global environment, to learn the new subject of field science to solve the problems of bioproduction against global ecosystem conservation, and then to profit for a better understanding of human activity in harmony with natural environments in the global ecosystem.		
Course Schedule	<ol style="list-style-type: none"> <li>1. Introduction of Field Bioscience in the Northern Biosphere (Y. Hoshino)</li> <li>2. The effects of snowpack on the water resources of the forest catchments in Hokkaido (F. Satoh)</li> <li>3. Population dynamics and life history of wild animals (T. Saitoh)</li> <li>4. Ecosystem functions and services under changing environment (H. Shibata)</li> <li>5. Taxonomy, morphology and phylogeny of Angiosperm (T. Azuma)</li> <li>6. Conservation and restoration of plant communities based on field data (H. Fujita)</li> <li>7. Energy crop and its genetic improvement (T. Yamada)</li> <li>8. Utilization of cover crops for sustainable crop production (T. Hirata)</li> <li>9. An introduction to phycology (C. Nagasato)</li> <li>10. Overall discussion (Y. Hoshino)</li> <li>11. Creation of kelp forest and resource management of kelp (N. Yotsukura)</li> <li>12. Visualization of Marin bioresources (K. Miyashita)</li> <li>13. An introduction to cephalopods (J. Yamamoto)</li> <li>14. Field bioscience using biologging instruments (Y. Mitani)</li> <li>15. Field Bioscience of Salmon: from Behavior to molecules (H. Ueda)</li> </ol>		
Homework	Preferable to carry out preparations and reviews of each lecture using appropriate books and lecture materials.		
Grading System	Attendance rate must be over 60%. Each lecturer evaluated the reports. The evaluation is based on the participation in class (50%), and reports (50%).		
Textbooks / Reading List			
Websites			
Website of Laboratory			
Additional Information			