

Subject name	Contemporary Approaches in Conservation of Forest Biodiversity	
Subject code	E.2.ACFB.SC.ECTIE.L	
Department	Forest Biodiversity	
Faculty	Forestry	
Subject supervisor/Lecturer	Dr hab. Anna Gazda	
General information	semester	summer
	ECTS credits	4.00
	Lectures total	14
	field classes	16
Objective and general description	<p>The objective of this course is to provide students an opportunity to learn about the major biotic and abiotic factors that influence forest diversity. The course will also develop students' skills in field observation and methods, data collection, analysis and interpretation of information gathered in the forests. In this module students will gain knowledge of how biodiversity is defined and measured. Also, the application of basic ecosystem concepts will be applied to help understand the influence of natural and anthropogenic disturbances on forest biodiversity. The understanding and skills gained by students will provide a foundation for the conservation of biodiversity within both natural and managed forests.</p> <p><u>Lectures</u></p> <ol style="list-style-type: none"> 1. Essentials of biodiversity <ol style="list-style-type: none"> 1.1. The concept of biodiversity <ol style="list-style-type: none"> 1.1.1. The components of diversity 1.1.2. Is diversity important or no? 2. Measurement of biodiversity (diversity indicators) <ol style="list-style-type: none"> 2.1.1. Species richness 2.1.2. Species diversity 3. Gradients of species richness 4. Factors determining patterns of biodiversity in both temporal and spatial scale 5. Forest biodiversity <ol style="list-style-type: none"> 5.1. Biodiversity in boreal forests 5.2. Biodiversity in temperate forests 5.3. Biodiversity in natural and managed forests. 6. Maintaining Biodiversity <ol style="list-style-type: none"> 6.1. How can we protect and restore biodiversity? 6.2. How do we decide which species and ecosystems to preserve? 6.3. The differences between natural and managed forests. 7. Biodiversity of a highly disturbed forest. <ol style="list-style-type: none"> 7.1. Restoration ecology and conservation biology. 7.2. Predicting effects of pollution on biodiversity 7.3. Does restoration enhance biodiversity? <p><u>Field training</u> (16 hours):</p> <ol style="list-style-type: none"> 1. Biodiversity in a natural forest <ol style="list-style-type: none"> 1.1. Introduction to field survey techniques. 1.2. Measuring forest biodiversity at the stand scale (a natural forest – ancient woodlands). 1.3. Natural processes and the amount of large trees and coarse woody debris in the forests. 1.4. Monitoring forest biodiversity. 	

	<p>2. Biodiversity in a secondary forest</p> <p>2.1. Measuring forest biodiversity at the stand scale (a secondary forest).</p> <p>2.2. Natural processes and the amount of large trees and coarse woody debris in the forests.</p> <p>2.3. Monitoring forest biodiversity</p> <p>3. Biodiversity in a managed forest</p> <p>3.1. Measuring forest biodiversity at the stand scale (a managed forest).</p> <p>3.2. Monitoring forest biodiversity.</p> <p>4. Biodiversity in a polluted forest</p> <p>4.1. Measuring forest biodiversity at the stand scale (a polluted forest.)</p> <p>4.2. Monitoring forest biodiversity.</p>
Assessment method	
References	<ul style="list-style-type: none"> • Angelstam, P., Dönz-Breuss, M., Roberge, J.-M. 2004. Targets and tools for the maintenance of forest biodiversity. <i>Ecological Bulletins</i> 51: 11–24. • Begon, M., Townsend, C.R., Harper J.L. 2005. <i>Ecology: From Individuals to Ecosystems</i>. Fourth Edition. Blackwell Science, Inc., Oxford, UK. • Huston, M. A. 1994. <i>Biological Diversity: The Coexistence of Species on Changing Landscapes</i>. Cambridge University Press, UK • Jordan III, W.R., Gilpin, M.E., Aber, J.D. 1987. <i>Restoration ecology: a synthetic approach to ecological research</i>. Cambridge University Press, Cambridge, UK • Kimmins J.P., 1997. <i>Forest Ecology. A Foundation for Sustainable Management</i>. Prentice Hall, Upper Saddle River, • Krebs, C.J. 2001. <i>Ecology: The Experimental Analysis of Distribution and Abundance</i>. Fifth Edition. Benjamin Cummings, San Francisco, CA. • Magurran, A. 2004. <i>Measuring Biological Diversity</i>. Blackwell Publishing, Malden, MA. • Perry, D.A. 1994. <i>Forest Ecosystems</i>. Johns Hopkins University Press, Baltimore, MD. • Pullin A. S. 2002. <i>Conservation Biology</i>. Cambridge University Press Cambridge, UK • Rosenzweig, M.L. 2001. The four questions: What does the introduction of exotic species do to diversity? <i>Evol. Ecol. Research</i> 3: 361-367. • Rosenzweig, M.L. 2003. <i>Win-win ecology: How the Earth's species can survive in the midst of human enterprise</i>. New York: Oxford University Press. • Rosenzweig, M.L. 2003. Reconciliation ecology and the future of species diversity. <i>Oryx</i> 37: 194-205. • Townsend, C. R., Begon, M., Harper, J. L. 2008. <i>Essentials of Ecology</i>. Third Edition. Blackwell Publishing, Malden, MA