

Subject name	Close to Nature Silviculture	
Subject code	E.2.CNS.SC.ECTIE.L	
Department	Silviculture	
Faculty	Forestry	
Subject supervisor/Lecturer	Dr hab. Maciej Pach	
General information	semester	summer
	ECTS credits	4.00
	Lectures total	15
	classes/field classes	9 /12
Objective and general description	<p>The main objective of the course is to familiarize participants with growth development of natural and semi-natural forests, uneven-aged silviculture, which mimic natural processes in forests, possibilities of moulding stand structure, biodiversity and aesthetic values in multifunctional forest management. Students will be introduced to prescriptions of close-to-nature silviculture combining management techniques and ecosystem processes.</p> <p><u>Lectures:</u></p> <ol style="list-style-type: none"> 1. Categories of forests. Close-to-nature silviculture terms and concepts. Nature-oriented silviculture and plantation. Remnants of natural (primeval) forests in Poland. PRO SILVA forestry principles. 2. Continuous Cover Forestry. Rules and methods. Operational guidelines. 3. Growth cycles of primeval forests and their significance for forest management. Ecological role of coarse woody debris in forest. 4. The aims of silvicultural prescriptions. Silvicultural systems – regeneration methods in relation to close-to-nature silviculture, their advantages and disadvantages. Impact on stand structure and texture. Uneven-aged silviculture. 5. Natural regeneration – methods, occurrence and importance. Determination of tree species composition and spatial arrangement of trees in regeneration. 6. Stages of stand development. Tending of forest ecosystem. Intermediate treatments supporting natural processes in stand. Release operation. Current and new concepts of thinning. Stand thinning of different tree species (non-commercial, timber stand improvement, commercial). 7. Managing structural and compositional diversity. Silvicultural methods to enhance biodiversity. Preservation and moulding of biodiversity. Natural disturbance regimes and their significance in forest management. Silviculture of multifunctional forest and in special places. 8. Transforming even-aged stands to continuous cover management. <p><u>Classes:</u></p> <p>Determination of water parameters (pH, anions, cations and heavy metals). Chosen water parameters – water quality in relation to different acts. Changes of different forest stands’ parameters due to the ski trial - student presentation. Different kind of anthropogenic effect on plant, soil and surface water in the area of your home land - student presentation</p> <p>Field training: Changes in forest stands close to the ski trial on the Jaworzyna Krynicka Mts and the effect of environmental conditions on surface water quality in this regions.</p>	
Assessment method	Oral exam	
References	<ul style="list-style-type: none"> • Bauhus J., Puettmann K., Messier C. 2009. Silviculture for old-growth attributes. Forest Ecology and Management 258 (4), 525-537; 	

- British Columbia. Ministry of Forests. Forest Practices Branch. 2003. Silvicultural Systems Handbook for British Columbia. For. Pract., BC. Min. For., Victoria, BC, Canada;
- Forest Commission 2008, Managing Continuous Cover Forests. Operational Guidance Booklet No. 7;
- Gilg O. 2005. Old-Growth Forests. Characteristics, Conservation and Monitoring, Habitat and Species Management. Technical Report N74bis, Montpellier, 96 p.;
- Nyland R. D. 2007. Silviculture. Concepts and Applications. Second edition, Waveland Pr. Inc., USA, 682 p.;
- PRO SILVA Brochure 1999;
- Puettmann K.J., Coates K.D., Messier C. 2009. A Critique of Silviculture. Managing for Complexity. Island Press, Washington, DC, 188 p.;
- Pukkala T., von Gadow K. 2012. Continuous Cover Forestry. Managing Forest Ecosystems. Vol 23, 2nd ed. , Springer Publishers, 296 p.;
- Silviculture and Forest Aesthetics Handbook, 2431.5. 2009. State of Wisconsin, Department of Natural Resources, USA, 551 p.;
- Smith D.M., Larson B.C., Kelty M.J., Ashton P.M.S. 1997: The practice of silviculture: applied forest ecology. 9th ed. John Wiley & Sons, Inc., New York, USA 537 p.;
- Woodland Owner Notes, Pruning Woodland Trees, North Carolina State University, Cooperative Extension Service