



## “FOREST PRODUCTION” SYLLABUS

Basic data of the subject			
<b>Academic Unit:</b>	<b>Faculty of Life and Environmental Sciences</b>		
<b>Course title:</b>	<b>Forest production</b>		
<b>Program:</b>	<b>Forest and Environmental Sciences</b>		
<b>Level:</b>	<b>Bachelor</b>		
<b>Course status:</b>	<b>Compulsory</b>		
<b>Study year:</b>	<b>Second year, fourth semester</b>		
<b>Number of hours per week:</b>	<b>3+2</b>		
<b>Credit value – ECTS:</b>	<b>5</b>		
<b>Time / location:</b>	<b>To be announced</b>		
<b>Lecturer:</b>	<b>Prof.Asoc.Dr. Mirvjena Kellezi</b>		
<b>Contact details:</b>	<b>mirvjena.kortoci@uni-prizren.com</b>		
<b>Course description:</b>	<p>This subject informs the students about fundamentals of forest growth, environmental conditions. Radiation, temperature, water, air and nutrient content. Modeling environmental conditions. The division of vegetation in Europe. Phyto-climatic zones and forest types in Kosovo. Forest stations quality. Forest stand as a quality tool. Structure of forest clusters. Growth of simple one-year-old stands. Zonal production models. Growth of individual trees. Patterns of representative trees independent of their stand position and of individual trees dependent on their stand position. Modeling forestry interventions. Classic description of thinning. Thinning in simple one-year stands and in mixed multi-age stands.</p>		
<b>Course objectives:</b>	<p>The student should be familiar with the basics of forest growth, physical factors, zones of European vegetation, thinning, forest thinning patterns etc.</p>		
<b>Learning outcomes:</b>	<p>Upon completion of this course, students will be able to:</p> <ul style="list-style-type: none"> <li>• Recognize the environmental conditions of forest growth.</li> <li>• Identify forest types of Kosovo.</li> <li>• Interpret the zonal patterns and growth of individual trees.</li> <li>• To analyze the forest structure and the forest quality.</li> <li>• To organize the thinnings application in order to increase the forest production..</li> </ul>		
<b>Contribution on student load (must correspond with learning outcomes)</b>			
<b>Activity</b>	<b>Hours</b>	<b>Days/week</b>	<b>Total</b>
Lectures	3	13	39
Exercise theoretical/laboratory	2	7	14
Practice work	2	5	10



Contact with lecturer/consultations	2	15	30
Field exercises	2	3	6
Mid-terms, seminars	2	2	4
Homework	-	-	-
Individual time spent studying (at the library or home)	2	15	30
Final preparation for the exam	1	10	10
Time spent in evaluation (tests, quiz, final exam)	1	5	5
Projects, presentations, etc.	2	1	2
<b>Total</b>			<b>150 hours (6 ECTS)</b>
<b>Teaching methods :</b>	Lectures, discussions, laboratory exercises, expeditions, consultations, seminars, independent projects, course assignments, colloquium, exams.		
<b>Evaluation methods:</b>	First intermediate exam: 10%, Second intermediate exam: 10% Seminars or other engagements: 10%, Regular active attendance: 10%, Final exam: 60%. Total 100%.		
<b>Literature</b>			
<b>Basic Literature:</b>	<ul style="list-style-type: none"> <li>Gadov, K.V. (1984). The relationship between diameter and diameter increment in <i>Pinus patula</i>. Proceedings of the IUFRO conference "Site and productivity of fast-growing plantations", held at Pretoria 1984, Vol.2:741-751.</li> <li>Gadov, K.V. , Postoli A. Prodhimi pyjor- Skripte leksionesh per Fakultetin e Sjkencave pyjore.</li> </ul>		
<b>Additional Literature:</b>	<ul style="list-style-type: none"> <li>James L. Bowyer, Rubin Shmulsky, John G. Haygreen: Forest Products and Wood Science: An Introduction, Blackwell, 2007.</li> <li>Mine V, Postolo A, Tabaku V. "Rrallimet Tregtare" 2002.</li> </ul>		

<b>Designed study plan:</b>		
<b>Week</b>	<b>Lectures</b>	<b>Exercises</b>
<i>First week:</i>	The bases of forests growth. Site factors and their influence on forest growth. The temperature. The water.	Exercises about calculation of site factors and their influence on forest growth.

<i>Second week:</i>	The air and nutrient content. Modeling the influence of site factors on tree growth.	Exercises about calculation of site factors and their influence on forest growth.
<i>Third week:</i>	Forest site productivity evaluation. Direct methods. Forest stand as a measure of forest site productivity assessment. Evaluation of forest site productivity in even aged forest. Mean and top height as measures of forest site productivity. Evaluation of forest site productivity in uneven aged forest. Indirect methods. Evaluation of site productivity by means of site parameters. The soil.	Exercises about forest site productivity evaluation (filed exercises).
<i>Fourth week:</i>	Vegetation, Climate, Topography. Mapping forest site productivity using Remote Sensing and GIS. Comparison of the methods of forest site productivity evaluation. Tree morphology. The crown. Representing crown projection area by polygons and circles. Crown profile models.	Intermediate exam. Methods of forest site productivity evaluation.
<i>Fifth week:</i>	Stand density. Classical methods of forest stand density evaluation.	Exercises about modeling tree morphology.
<i>Sixth week:</i>	Position independent competition indexes of individual trees. Methods for individual tree competitors' identification.	Exercises about stand density evaluation.
<i>Seventh week:</i>	Position dependent competition indexes of individual trees.	Exercises about position independent competition indexes of individual trees and methods of tree competitors' identification.



<i>Eighth week:</i>	Spatial structures of stands. Spatial occupancy models. Differentiation. Coefficients of variation of diameter and tree height, differentiation of diameters, average distance to (n) number of trees.	Exercises about position dependent competition indexes of individual trees.
<i>Ninth week:</i>	Species richness and diversity. Species intermingling. Index of aggregation and segregation.	Intermediate exam. Stand density and competition evaluation. Exercises about the spatial structures of stands.
<i>Tenth week:</i>	Pure even aged forests growth. Yield tables. Yield functions. Growth models based on stand density.	Exercises about spatial structures of stands.
<i>Eleventh week:</i>	Density dependent tree growth models. Relationship between stand density and growth.	Course project about spatial structures of stands.
<i>Twelfth week:</i>	Individual tree growth models. Position independent tree growth models (diameter, height, basal area). Position dependent tree growth models.	Exercises about pure even aged forests growth. Exercises about individual tree growth models.
<i>Thirteenth week:</i>	Forest simulation methods.	Examples of growth models depended by density.
<i>Fourteenth week:</i>	Modeling the silvicultural prescriptions. Classical description of thinning. Type, intensity and periodicity of thinning.	Examples of growth models depended by tree position in stand. Height and diameter growth evaluation of individual trees.
<i>Fifteenth week:</i>	Thinning in pure even aged forests. Position depended and independent thinning indices.	Exercises about modeling silvicultural prescriptions (field exercise and course project).
<b>Academic policies and rules of conduct:</b>		
Regular and active participation of students in lectures, exercises (practical part) and in seminar work. Keeping quiet in lessons, disabling mobile phones, timely access to the classroom, etc.		