"SILVICULTURE 1" DENDROMETRY

Basic data of the subject	
Academic Unit:	**Life and Environmental Sciences Faculty**
Course title:	**Dendrometry**
Program:	**Forestry and Environmental Sciences**
Level:	**Bachelor**
Course status:	**Compulsory**
Study year:	**Second year, first semester**
Number of hours per week:	**3+2**
Credit value – ECTS:	**6**
Time / location:	**To be announced**
Lecturer:	**Prof. Asoc. Dr. Faruk Bojaxhi**
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Course description:	Dendrometry is the branch of botany or science that deals with the measurement of trees and forest stands. The term dendrometry comes from old Greek where ("dendro" = wood) and ("meter" = wood measurement). Generally dendrometry represents a biometry of trees and forest stands, so it aims to perform a mathematical description and presentation of woods and forest stands using statistical and mathematical methods.
Course objectives:	The dendrometry facility is the description and biometric representation of woods and forest stands, by identifying the laws on the tree shape, the structure of trees and stands and on this basis elaborates methods for their measurement, volume estimation, cluster, structure, etc. Measuring trees and forests is fundamental to the practice of forestry and forestry sciences. Measurements are made to understand how the forests behave and to make sure they are managed correctly.
Learning outcomes:	After completing this course, students should be able to: 1. To describe the object of the science of dendrometry as well as the methods of its study. 2. To apply the rules of forest measurement and its methods. 3. To analyze the age of forests and the definition of sleds. 4. To evaluate the inventory data and forest classification. 5. To develop skills for forest production.

Contribution on student load (must correspond with learning outcomes)			
Activity	**Hours**	**Days/week**	**Total**
Lectures	3	15	45
Exercise theoretical/laboratory	2	15	30

Practice work	1	5	5
Contact with lecturer/consultations	1	15	15
Field exercises	1	15	15
Mid-terms, seminars	1	-	1
Homework	-	-	-
Individual time spent studying (at the library or home)	1	15	15
Final preparation for the exam	1	15	15
Time spent in evaluation (tests, quiz, final exam)	1	5	5
Projects, presentations, etc.	4	-	4
Total			**150 hours (6 ECTS)**
Teaching methods :	Lectures, discussions, consultations, technical exercises, formula solutions, independent projects, colloquia, exams.		
Evaluation methods:	During a 15-week period will hold a colloquia and final exam.		
Literature			
Basic Literature:	Llazar Treska, Thimaq Lako-book,,Dendrtometria'' Forest Measurements, Fifth Edition von Thomas Eugene Avery und Harold E. Burkhart | 8. Mai 2015.		
Additional Literature:	Manual for forest measurement, from Asbjørn Kjellsen Forest Mensuration von John A. Kershaw Jr., Mark J. Ducey, et al. | 27. Dezember 2016.		

Designed study plan:		
Week	**Lectures**	**Exercises**
First week:	Statistical parameters in Dendrometry	Presentation and practical demonstration of uses of forest measurement tools which are used in forestry
Second week:	Theoretical bases of wood measurement	Field exercise, tree measurement in the field (Diameter, Height, Increment, Age)
Third week:	Methods of measuring the cutting trees	Practical exercise of calculation within sample plot, tree volume, calculation of annual increment,

		calculation of distances among trees within sample plot.
Fourth week:	Measuring the standing trees	Practical exercise on calculation of tree laying tree in sections
Fifth week:	Instruments for measuring of diameter and height	Practical exercise on calculation of volume of tree based on sections
Sixth week:	Morphological structure of the forest stand	Practical exercise in field of morphological structure of forest stand
Seventh week:	Correlation between height and diameter	Field exercise of assessment of correlation of diameter and height of tree
Eighth week:	Important mathematical calculations	Presentation of inventory types in forestry, objectives and goals
Ninth week:	Measurement of the forest stand	Practical exercise, calculation of volume in level of forest stand
Tenth week:	Assortment of the standing trees	Field exercise of forest assortments, divided on quality classes
Eleventh week:	Biomass of trees and forests stands	Assessment and calculation of wood biomass within stand level
Twelfth week:	Inventory of forest stands	Field exercise of forest inventory in forest stand level
Thirteenth week:	Defination of the simple plots	Field exercise of measurements for national forest inventory, inventory for forest management plans, inventory of afforestation areas, inventory on assessment of forest fire degradation
Fourteenth week:	Auksometria	Practical exercise of Auksometry
Fifteenth week:	Increase in volum and diameter	Practical calculation of tree volume
Academic policies and rules of conduct:		

Regular and active participation of students in lectures, exercises (practical part) and in seminar work. Keeping quiet in lecture, disabling mobile phones, timely access to the classroom, etc.