

Basic data of the subject	
Academic Unit:	University of Prizren „ Ukshin Hoti” Faculty of Life and Environmental Science
Department	Forestry and Environmental Sciences
Program	Forestry and Environmental Sciences
Course title:	Forest cutting (utilization)
Level:	Bachelor
Course status:	Compulsory
Study year:	Second year
Number of hours per week:	2+1
Credit value – ECTS:	3
Time / location:	first semester
Lecturer:	Prof.Ass.Dr. Ylli Kortoçi
Contact details:	Mob. +377 45846817 E-mail: ylli.kortoci@uni-prizren.com
Course description	
	<p>The Forest utilization module addresses topics that help students prepare as future technicians for sustainable forestry and the environment as a whole. Forest cutting, through the utilization of the trees that have reached the age of maturity, creates the conditions for restoring the forest, the basic elements for a good ecological equilibrium. Thinning operations and sanitary cuttings operations are other competitive factors with the same objective. Forest cutting will serve the students to equip them and enable them with basic theoretical and practical knowledge of the application of technology and projection of a wide range of forest works and forest cutting. The material is available to anyone who will deal with wood cutting problems. The lectures addresses problems such as:</p> <p>Cutting and wood first processing in the forest; different technological ways for extracting wood material from parcels to motorways, near which it is stored and then loaded to the receiving places or further processing sites; basic principles, design of projection tasks; organization of labor force, utilization and evaluation of forest trees through the implementation of the most advanced and effective technologies. Selection of a forest utilization system, focusing in particular on technical and economic factors and silvicultural rules;</p>

	organization and planning of works; measuring time and productivity in wood utilization. Productive and unproductive times. Work planning and practical implementation at the site.		
Course objectives:	<p>Through the "Forest cutting" subject program students will receive the necessary information in:</p> <p>Means of intervention through cuttings in forest; Designing the parcel where it will be intervened by cuttings; Using the technologies adapted to Kosovo, and the advanced technologies used today in the world; Equipment and cutting technologies. Timber extraction roads and the ways they are used. Productive and unproductive times, avoiding lost time. Organization of the site etc.</p>		
Learning outcomes:	<p>The development format of this module will be based on several elements such as lectures, laboratory practices, exercises, control tasks and final exams.</p> <ul style="list-style-type: none"> - Lectures development will be every week for two hours per week. The lectures material is in the form of the book and in the ppt format. - Laboratories will be developed in a form of discussion with the students on the planned theme and will continue to apply the practical implementation of the themes. - Specific themes include exercises. Based on the example explained by the lecturer, students are given the opportunity to work on other examples independently. - Control tasks are announced and planned to check the assimilation by students about a certain set of topics. - The module foresees the development of training hours for which students will visit the forest centers or sites, and the demonstration of working equipments on utilization sites. - Final exam is a very important element for student assessment, and it includes at least 70% of the overall assessment. 		
Contribution on student load (must correspond with learning outcomes)			
Activity	Hours	Days/week	Total
Lectures	2	15	30
Exercise theoretical/laboratory	1	15	15

Practice work			
Contact with lecturer/consultations	8/semester	-	8
Field exercises			
Mid-terms, seminars	2/semester	-	2
Homework	6/semester	-	6
Individual time spent studying (at the library or home)	4	15	70
Final preparation for the exam	6/semester	-	6
Time spent in evaluation (tests, quiz, final exam)	6/semester	-	6
Projects, presentations, etc.	7/semester	-	7
Total			150 orë
Teaching methods			
	Lectures, discussions, laboratory exercises, expeditions consultations, seminars, independent projects, homework assignments, colloquium, course assignments, exams.		
Evaluation methods			
	First assessment (colloquium): 15%, Seminars or other engagements: 10%, Regular attendance: 5% Final exam: 70%, Total: 100%.		
Literature			
Basic Literature:			
	<ol style="list-style-type: none"> 1. Avarami A. Teknologjia e shfrytezimit te pyjeve. 2. Giovanni Hippoliti, le utilizzazioni forestali 1990. 3. S. Baldini, A. Cioe, R. Picchio. "Sicurezza ed Antinfortunistica nei Cantieri Forestali e di Manutenzione del Verde Urbano. Valutazione dei Rischi". Roma 2002 4. KORTOÇI, Y., KELLEZI, M. (2012): Shfrytezimi i pyjeve te ahut te Shqiperise me nje silvikulture te qendrueshme. 		
Additional Literature:			
	<ol style="list-style-type: none"> 1. Luciano Martarello, Arturo Millesi, Renzo Rey, Nevio Yeullaz, Giancarlo Zorzetto 2. Ruggero Marazzato, Tiziano Martin - Settore Gestione Proprietà Forestali Regionali e Vivaistiche - Regione Piemonte (Vercelli). 		

3. Paolo Cielo - Associazione Istruttori Forestali (Torino).

Designed study plan:	
Week	Lectures which will be held
First week:	Forest and forest utilization. Short history of forest utilization. The features of forestry technology.
Second week:	The bases of forest utilization. Production. Wood extraction. Mechanized felling. Wood cutting methods.
Third week:	Technology and Technological System. Technology as a field of knowledge and human activity. Effects of technology. Technological system. The composition of a technological system. Processes.
Fourth week:	Timber production by arms.. Site construction. Felling. Felling preparatory work. General principles of tree felling. Notch cut. Large trees felling.
Fifth week:	Branches removal. Necessity for branches removal. General principles of branches removal. Branch removal technique. Branches removal by chainsaw. The removal of thick tree branches.
Sixth week:	Cleaning of bark. Removing the coniferous species bark. Debarking advantages. Mechanized debarking.
Seventh week:	Wood assortment. Silvicultural assortment. Industrial assortment. Assortment techniques. Assortment criteria. Standards and assortment conditions.
Eighth week:	Sectioning and grouping. Seconding techniques. Basic rules. Wood slash by arm. Mechanic wood slash.
Ninth week:	By arm timber production equipment. Supplementary equipments. Felling and slash equipments. Measurement equipments.
Tenth week:	Mechanized timber production. Felling and felling - stacking. Cutters. Saws. Felling heads. Felling arm. Means.
Eleventh week:	Collection. Extraction of timber material (internal transport). Collection systems. Animal traction. Motorcycle traction. Creeping.
Twelfth week:	Felling productivity. Productive time. Unproductive time. Beech forests utilization methodology. Beech high forests. Beech coppice. Collection and stacking of wood material. Collection on the side of the road. Measurement of the extracted material.
Thirteenth week:	Transportation. Transportation in the motor ways. Delivery to processing centers. Silvicultural interventions. Cleaning / thinning by arm. Forest parcel preparing by arm tools. Mechanized preparation of forest parcels.
Fourteenth week:	Forest utilization. General provisions. Felling cutting by arm

	and chainsaw. Wood felling when climbing. Removing the branches with arms and chainsaw. Collecting with arms and chainsaw. Mechanized cutting and conversion.
Fifteenth week:	Extraction / Internal transport. General provisions. Transportation with arm. Transportation with wood groves. Transport with animals. Transport with skidder and winch. Transportation by forwarder. Transport by cable car. High risk operations. Climbing in forest trees. Utilization of wood material bursts from storms. Fires suppression.

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.	

Exercises

Designed study plan:	
Week	Exercises which will be held
First week:	Practice on forest and forest utilization. Short history of forest utilization. The features of forestry technology.
Second week:	Practice on the bases of forest utilization. Production. Wood extraction. Mechanized felling. Wood cutting methods.
Third week:	Practice on technology and Technological System. Technology as a field of knowledge and human activity. Effects of technology. Technological system. The composition of a technological system. Processes.
Fourth week:	Practice on timber production by arms.. Site construction. Felling. Felling preparatory work. General principles of tree felling. Notch cut. Large trees felling.
Fifth week:	Practice on branches removal. Necessity for branches removal. General principles of branches removal. Branch removal technique. Branches removal by chainsaw. The removal of thick tree branches.
Sixth week:	Practice on cleaning of bark. Removing the coniferous species bark. Debarking advantages. Mechanized debarking.
Seventh week:	Practice on wood assortment. Silvicultural assortment. Industrial assortment. Assortment techniques. Assortment criteria. Standards and assortment conditions.
Eighth week:	Practice on sectioning and grouping. Seconding techniques. Basic rules. Wood slash by arm. Mechanic wood slash.
Ninth week:	Practice on timber production equipment by arm.

	Supplementary equipments. Felling and slash equipments. Measurement equipments.
Tenth week:	Practice on mechanized timber production. Felling and felling - stacking. Cutters. Saws. Felling heads. Felling arm. Means.
Eleventh week:	Practice on collection. Extraction of timber material (internal transport). Collection systems. Animal traction. Motorcycle traction. Creeping.
Twelfth week:	Practice on felling productivity. Productive time. Unproductive time. Beech forests utilization methodology. Beech high forests. Beech coppice. Collection and stacking of wood material. Collection on the side of the road. Measurement of the extracted material.
Thirteenth week:	Practice on transportation. Transportation in the motor ways. Delivery to processing centers. Silvicultural interventions. Cleaning / thinning by arm. Forest parcel preparing by arm tools. Mechanized preparation of forest parcels.
Fourteenth week:	Practice on forest utilization. General provisions. Felling cutting by arm and chainsaw. Wood felling when climbing. Removing the branches with arms and chainsaw. Collecting with arms and chainsaw. Mechanized cutting and conversion.
Fifteenth week:	Practice on extraction / internal transport. General provisions. Transportation with arm. Transportation with wood groves. Transport with animals. Transport with skidder and winch. Transportation by forwarder. Transport by cable car. High risk operations. Climbing in forest trees. Utilization of wood material bursts from storms. Fires suppression.