

<b>Study program:</b> Forestry and Natural Resources Management			
<b>Subject name:</b> Sustainable Forest Utilization			
<b>Teacher (s):</b> <a href="#">Milorad Danilović</a> , <a href="#">Dušan Stojnić</a> , <a href="#">Slavica Antonić</a>			
<b>Subject type:</b> Elective			
<b>ECTS:</b> 5			
<b>Condition:</b> Bachelor's degree			
<b>Subject aim:</b> Provision of necessary technical, technological, organizational, economic and other professional knowledge that will enable students to successfully solve tasks and problems in the field of forest utilization (within the forestry profession).			
<b>Subject outcomes:</b> The student will be able to properly select adequate technology for forest utilization and create planning documents for forest production.			
<b>Contents of the course:</b> <b>Theoretical teaching:</b> Introduction to the content of the subject. Constructive and exploitative characteristics of work tools and their importance for the emission of harmful gases, as well as the impact on soil. Forest certification. The selection of work methods and work systems according to the ergonomic, energy, environmental and economic aspects. Damages to standing trees, young trees and the root system caused by forest machinery. Planning of road infrastructure in forests. Construction of road infrastructure in forests with a special protection regime. Technical and structural characteristics of work tools in steep and low capacity terrains. The choice of optimal technologies of forest utilization, considering the damage to the stand on the ground and the reduction of CO <sub>2</sub> emissions. Methods of repairing damage caused by mechanization in special-purpose forests. The technology of utilization of forest biomass for energy. The use of special fuels for the purpose of reducing the emission of harmful gases. Soil compaction and soil erosion as a result of the movement of vehicles for wood assortments transport. The possibilities of reducing vehicle contact pressure on forest ground. The efficiency of transporting wood by using wire-rope systems, spools and animals in areas under special protection regimes. <b>Practical teaching:</b> Cost calculation of logging. Work norms in forest utilization jobs: calculation of recording lists, processing of recorded data and norm calculation. Planning the primary network of forest roads using geographical information systems(GIS-a), digital terrain model and other modern tools. The determination of the mean transport distance of skidding in lowland and mountainous areas. The calculation of costs for the construction and maintenance of forest roads and transportation of wood assortments. Drafting of operational plans.			
<b>Literature:</b> MacDonald, A.J. (1999): Harvesting Systems and Equipment in British Columbia; Forest Engineering Research Institute of Canada Längin, D. et. al. (2010): The South African Ground Based Harvesting Handbook Lan, Z., 2001: A cost model for forest machine operation in wood cutting and extraction. University of Helsinki, Finland, 1-15.			
<b>Number of lessons of active teaching:</b>	<b>Theoretical lessons:2</b>		<b>Practical lessons:2</b>
<b>Teaching methods:</b> The course consists of lectures and consultations. In order to provide students with a better understanding of the subject matter, theoretical presentations are combined with video presentations, demonstrations, discussions and fieldwork.			
<b>Grading scale (maximum number of points 100)</b>			
<b>Pre-exam duties:</b>	поена	<b>Final examination:</b>	points
Activity during the lessons	10	Written examination	
Practical teaching	20	Oral examination	50
Test	10	.....	
Term paper	10		