

Study program: Forestry and Natural Resources Management			
Name of the subject: Research Design			
Teacher(s): dr Smiljana Jakšić assistant professor ; dr Jelena Beloica associate professor			
Status of the subject: Obligatory			
Number of ECTS credits: 10			
Conditions: /			
Subject goal Do you want to learn what are the key points in designing of research in forestry? Do you want to make decisions and conclusions about the state and potential impacts on forest ecosystems based on the collected data? You find answers to these questions after taking the course.			
Outcome of the subject The subject provides a strong basis that spurs on independent and critical thinking. The student can design, conduct, analyze and present studies on forestry and natural resources.			
Subject content <i>Theory</i> Data collection; Presentation of Data (Bar Charts, Histograms, Pie Charts, Scatter Plots, Tables); Description of Data (Measure of Location and Dispersion); The Normal Distribution (Characteristics, Testing for the Normal Distribution, Confidence Interval for the Mean); Analysis of Qualitative Data (Binomial Distribution, Chi-Squared Test); Error Sources and Planning (Random Error and Sample Size, Systematic Errors, Sampling); Assessment of Relationship Between Two Variables (Linear Regression, Logistic Regression); Comparing two groups (Paired t-Test, Comparing Two Groups Mean); Analysis of variance. <i>Practical learning</i> Special focus is put on exercises. Exercises consist of data analysis utilizing software R and of presenting and communicating the findings. The data used in the program are obtained through research carried out at the Faculty of Forestry			
Literature 1. Seth Michelson, Timothy Schofield, <i>The biostatistics cookbook: the most user-friendly guide for the bio/medical scientist</i> , Springer 2002. 2. Winston Chang, <i>R Graphics Cookbook: Practical Recipes for Visualizing Data</i> , O'Reilly Media 2012.			
Number of active teaching classes		Theoretical teaching: 60	Practical teaching: 60
Method of carrying out the teaching Multidisciplinary thinking and problem-solving skills are emphasized in teaching.			
Evaluation of knowledge (maximum number of points 100)			
Pre-exam obligations	Points	Final exam	Points
Activity during lectures		Written exam	
Practical teaching		Oral exam	55
colloquium		
Seminar(s)	45		
The methods of testing the knowledge can be different. The table below lists only some options: (written exams, oral exams, project presentation, seminars, etc.....)			
*maximum length 2 A4 pages			