Course specification: **Forestry and Natural Resources Management**

Type and level of studies: Master study program

Name of the subject: Decision making in soil and water resource

Professor (Name, middle name, last name): dr Tijana Vulević, assistant professor

Course status: elective course

ECTS Number: **5**

Condition:

Purpose of subject:

The aim of the subject is to give knowledge of methods for successful protection of land and water resources in river basin. The course is focused on the developing competence in the formulation of decision making problems related to the soil and water resources protection and implementation of different tools and methods such as multi-criteria decision analysis.

The outcome of the subject:

Students will acquire the skills necessary for proper formulation of decision making problems related to the soil and water resource protection. They will gain knowledge of process, phases and methods handling multi-criteria decision making problems.

Course contents:

Theoretical part of course

Analysis of decision-making problems, decision-making process and phases, types of decisions, decision-making models and methods, methods and techniques selection, decision-making in the protection of soil and water resources; Analysis of decision-making: basics of decision making, decision-making without sampling, analysis of decision-making with sampling; Utility theory: single-attribute and multi-attribute utility theory; Multi-criteria decision analysis: basics of Multi-criteria decision analysis, Multi-attribute decision making, Multi-objective decision making, Multi criteria decision analysis methods, Analytic hierarchy process method (AHP), ELECTRE, PROMETHEE method.

Practical part of the course*:*

Application of multi-criteria decision analysis methods for soil and water resource protection. Application of AHP method, application of ELECTREE method, Application of PROMETHEE method.

Literature:

1. Tzeng, G-H., Huang, J-J. (2011): Multiple Attribute Decision Making, Methods and Applications. CRC Press, Taylor & Francis Group, Boka Raton, London, New York.
2. Belton,V., Stewart, T.J. (2001): Multiple Criteria Decision Analysis: An Integrated Approach, Kluwer Academic Publishers.
3. Vulevic,T., Dragovic, N., Kostadinov, S., Belanovic Simic, S., Milovanovic, I. (2015): Prioritization of Soil Erosion Vulnerable Areas Using Multi-Criteria Analysis Methods. Polish journal of environmental studies 24 (1), 317-323
4. Dragovic, N. Vulevic, T. (2015): Wahl des besten Angebots zur projektplanung im bereich der wasserwirtschaft mittels der AHP-Methode, Bauingenieur, 90 (09), 420-426.

Number of hours of active classes			
Lectures: 2	Exercises: 2	Other forms of teaching:	

Methods of teaching

Lectures, exercises, seminar papers

Assessment of knowledge (maximum number of poens 100)

Pre-exam requirements:	points	Final examination:	points
Activity during lectures	5	Written exam	
Practical classes	20	Oral exam	45
colloquium(s)	15		
seminar(s)	15		