

Study program / course: Mechanical Engineering				
Type and level of study: Master academic studies				
Course: Technology and plants for the water and air treatment				
Lecturers: Vanja M. Sustersic, Ph.D.				
Status of course: Elective for module M₄, III semester				
Number of ECTS: 6				
Precondition: /				
The objective of course Obtaining the necessary knowledge about the treatment of drinking water and wastewater, as well as knowledge about the treatment of air. The aim of the classes is for students to be competent, that on the basis of the existing and new technologies and they be able to design and make decisions which of the plants are better for water and communal systems.				
The outcome of course After finishing this course, students will be able, own or as a team, to solve the problems that are related to technology and projecting system for the treatment of drinking water, wastewater or air. They will also be able to successfully resolve problems related to the issue of municipal water systems and to manage modern waterworks and sewage systems.				
Syllabus				
Theoretical study Hydro-geological cycle. Protection of sources. Legal regulations. Treatment of drinking water. Shuffle and flocculation. Sedimentation. Filtering. Adsorption. Softening. Conditioning plants for drinking water. Treatment of wastewater. Sedimentation, aeration. Biological treatment of wastewater. Treatment plants for the wastewater. Treatment plants for air. Cyclones. Multicyclones. Electrostatic air filters.				
Practical classes include: Within the exercises, but also by independent work, students will do two projects, which provide calculation and designing of the plant for treatment of water or air in a 3D environment. At the same time, the visit to the city communal system will be provided, where students will learn about the work of the plants for the treatment of drinking water and plants for the treatment of wastewater.				
Recommended reading 1. Djuric, Dusko: Supply water for drinking, Novi Sad: Faculty of Engineering Science, 2006 (in Serbian) 2. Radovanovic, Milan R.: Department matter. Part 2, Industrial water, the paper, Faculty of Mechanical engineering, 1989 (in Serbian) 3. V. Šušteršič: "Technology and plants for water treatment," script, FME Kragujevac, 2008 (in Serbian)				
The number of hours of active teaching:				Other classes:
Theory: 3	Practical classes: 1,4	Other forms of teaching: 0,6	Research study:	1
Methods of teaching By the use of modern teaching resources - video presentations and educational films - students will be prepared for interactive work. Exercises consist of two homeworks and verified knowledge from two tests and a final work.				
Evaluation of knowledge				
Pre-final exam obligations	points	Final exam	points	
Activities during the classes:	10			
Practical classes:		Final work	30	
Colloquiums(s) :	2*15			
Seminar(s) :	2*15			