



WATER TREATMENT AND PROTECTION ENGINEERING

MASTER DEGREE ACADEMIC STUDIES

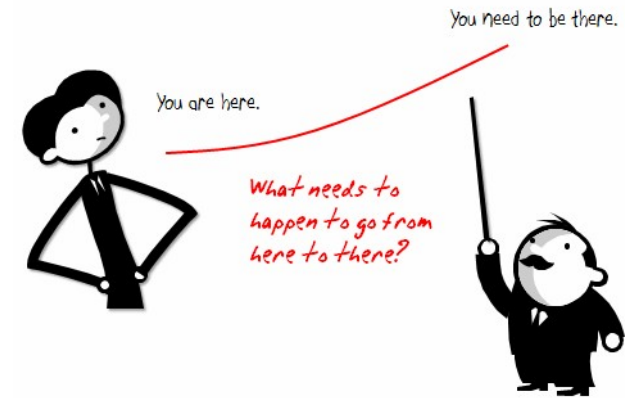


INTRODUCTION



- The study program Water Treatment and Protection Engineering was developed as new, up-to-date, postgraduate curricula as a part of TEMPUS project titled as Development of Environmental and Resources Engineering Learning (acronym DEREL) Environment and Resources Engineering at the University of Novi Sad, Serbia, Ss. Cyril and Methodius University in Skopje, FYR of Macedonia and Polytechnic University of Tirana, Albania, based on the European Credit Transfer System and in accordance with the Bologna Process, following the criteria and conditions for setting up a Double Postgraduate Degree. The project
- It is a Master academic study at the Department of Environmental Engineering and Occupational Safety and Health, Faculty of Technical Sciences, University of Novi Sad. The acquired academic degree is Master in Engineering of Water Treatment and Protection (M.Sc.).

NEEDS, OBJECTIVES AND OUTCOMES



- The Master Program "Water Treatment and Protection Engineering" enables the students to concretize and expand their knowledge concerning waste water treatment.
- The interdisciplinary nature of the curriculum Water Treatment and Protection Engineering, being a result of technical and engineering skills, specifically educates engineers in the field of environmental protection and enables them to solve the accumulated problems in the system of environmental and water protection, as well as in other industrial and commercial systems.
- The curriculum Water Treatment and Protection Engineering is developed in response to the needs of the industry, business and institutions, which have to face environmental problems and ask for engineers with interdisciplinary expertise in the field of environmental engineering and water treatment and protection.

No.	Accredited	ECTS
First year		
1	Statistical and numerical methods	9
2	Elective course	5
	Hydrotechnics and hydromechanics - fundamentals	
	Environmental Protection in Energy Production	
	Sources and Environmental pollution	
3	Elective course	5
	Hydrometry	
	Environmental Transport Processes	
	Basic biological principles in the environmental protection	
	Chemistry of Water, Air and Soil Pollution	
4	Elective course	6
	Environmental system analysis	
	Automation in Environmental Processes	
	Hydraulic constructions – design and protection	
5	Technological processes in the water quality control	7
6	Management of environmental protection systems	5
7	Hazards and the environment	9
8	Renewable Energy Technologies	6
9	Fluvial Hydraulics	8
	TOTAL ECTS – First year	60
Second year		
10	Elective course	4
	Advanced Sanitary Engineering	
	Solid Waste Management	
	Monitoring and Management of systems	
11	Design of water treatment plant processes	5
12	Design of wastewater treatment plant processes	5
13	River Basin Management	5
14	Elective course	4
	Geotechnics - fundamentals	
	Environmental Economics	
	Environmental Risk Management	
15	Environmental Impact Assessment and Management	4
16	Practice	3
17	Research on theoretical basis of Master thesis	15
18	Master thesis	15
	TOTAL ECTS – Second year	60

PROGRAM OUTCOMES

- The purpose of the curriculum is to educate students for the profession of Master in Water Treatment and Protection Engineering, in accordance with the basic needs of society.
- Graduate Master Students of Water Treatment and Protection Engineering are competent and qualified to solve complex multidisciplinary problems, both from the theoretical and practical point of view.
- Qualifications and competences for the completion of the graduate academic studies are gained by the students, who:
 - demonstrated theoretical knowledge and understanding in the field of environmental engineering, also increased by the knowledge gained at undergraduate studies. It is the basis to develop critical and independent thinking;
 - are able to apply knowledge for solving complex problems in the new or unknown environment;
 - who have the ability to integrate knowledge, solve complex engineering problems and to reason on the basis of information available, including considerations and responsibilities;
 - are able to clearly and unambiguously transfer the knowledge and way of reasoning to professionals and general public;
 - possess the ability to continue their studies in individual way.



STUDENT MOBILITY



- Students have the opportunity to spend one semester in one of the Universities during their studies:
 - **University of Tirana,**
 - **University of Skopje,**
 - **University of Florence.**
- This is very important because students have the opportunity to upgrade their knowledge in other countries, and in addition all courses are harmonized and recognized with each other.



STUDENT SPECIALIZATION

- During the study period, students were provided with cooperation and professional practice in leading water management companies engaged in the largest research projects in the field of water resources management, such as Public Utility „Vojvodina Waters“ and „Jaroslav Černi“ Institute for Water Management.
- In cooperation with „Jaroslav Černi“ Institute for Water Management, students have the possibility of training and practical work on the preparation of master's thesis, which is coordinated by experts with extensive practical experience.

