

Table 5.2 Course specification

Type and level of studies: Bachelor Academic Studies, 1 st level			
Course name: Fundamentals of Waste Management			
Course status: Compulsory			
Number of ECTS credits: 7			
Requirement: None			
Course aim			
Introducing students to waste characterization and categorization. Introduction to the basic principles of waste management and understanding the need for the application of a waste management hierarchy (prevention of waste, recovery of waste material or energy consumption), and disposal in sanitary landfills with all control measures.			
Course outcome			
Systematic knowledge about the character of waste, utilization of waste as a source of secondary raw materials, the importance of recycling, waste separation and disposal at the landfill.			
Course content			
<i>Theory</i>			
Definition of solid waste. Origin and types of waste. Characterization and classification of waste. Municipal waste as a global problem. Separation and utilization of different recyclable materials from municipal waste or getting fuel from waste. Recycling and its importance. Systematized basic knowledge about the processes of incineration, pyrolysis, gasification, anaerobic digestion and composting of waste. Waste disposal and process control in closed landfills. Other wastes those are harmful to the environment due to possessing one or more hazardous characteristic.			
<i>Practice: Practical classes, OFT, SRW</i>			
Determination of the waste type and classification of waste according to the waste catalog. Solid waste sampling. Methods of quartering the waste samples. Morphological composition of municipal waste, inorganic and organic components. Introduction to the separation of secondary raw materials from mixed municipal waste. Potential of municipal waste for biological treatment. Solid waste anaerobic digestion. Solid waste composting. Stabilization of waste. Characterization of waste by leaching tests. Methodology of waste disposal.			
Calculation - Calculation of waste composition. Calculations related to the collection and transport of municipal waste. Calculations related to waste pre-treatment. Calculations related to recycling, thermal, aerobic and anaerobic treatment of waste. Calculations related to the disposal of waste. Calculations related to the energy value of waste.			
Literature			
1. Teaching material, PMF Novi Sad, PMF moodle			
2. M. Pavlović: Ekoško inženjerstvo, Tehnički fakultet „Mihajlo Pupin“, Sređanin, 2004.			
3. Š. Đarmati: Menadžment čvrstog i opasnog otpada, Viška politehnička škola, Beograd, 2005.			
4. J. Pichtel: Waste Management Practices, Municipal, Hazardous and Industrial, Taylor and Francis, Boca Raton/Singapore, 2005			
5. N. Cheremisinoff: Handbook of Solid Waste Management and Waste Minimization Technologies, BH, Amsterdam-Tokyo, 2003.			
6. T. Christensen: Solid Waste Technology and Management- Вolumes 1 и 2, Wiley, 2010.			
Number of classes of active teaching			Other classes
Lectures: 3(45)	Practice: 3(45)	OFT: SRW:	
Teaching methods Lectures, practice, seminars, consultation			
Assessment of knowledge (maximum of 100 points)			
Pre-exam obligations	Points	Final exam	points
activity during lecture classes	5	written exam	40
practical teaching	15	oral exam	20
colloquia	20	/	