Course Unit Descriptor

Study Programme: Environmental Engineering

Course Unit Title: Solid Waste Management

Course Unit Code: Z309A

Name of Lecturer(s): Associate Professor Dejan M. Ubavin, PhD; Professor Goran V. Vujić, PhD; Associate Professor Nemanja S. Stanisavljević, PhD

Type and Level of Studies: Bachelor Academic Degree

Course Status (compulsory/elective): Compulsory

Semester (winter/summer): Summer

Language of instruction: English

Mode of course unit delivery (face-to-face/distance learning): face-to-face

Number of ECTS Allocated: 7

Prerequisites: None

Course Aims:

Enabling students to view the entire waste management cycle and to solve problems related to the entire system, as well to individual parts of the system. The course objective is to introduce students to all parts of the waste management system (from formation, through collection, transport, recycling, to the final waste disposal) where special accent is placed on finding the adequate solution in real situations.

Learning Outcomes:

Students gain knowledge necessary for understanding the character of municipal waste management. Students should be able to give answers on the design requirements or to offer consulting services in the field of solid waste management by using the acquired knowledge from this course. The knowledge from this course represents the necessary foundation in certain courses during the studies.

Syllabus:

Theoretical lectures: The concept of waste, Composition of municipal waste, Properties of municipal waste, National legislation on municipal waste, EU and world regulations on municipal waste, Waste management, Main characteristics of waste management, Waste management plan, Waste disposal, Utilization of landfill gas, Waste collection and separation plants, Separation and recycling of electronic waste, Combustion of municipal waste, Mechanical biological treatment MBT, Composting the municipal waste, Special flows of waste in settlements (medical, batteries, Transport and transport vehicles, Separation methods of secondary raw materials on spot and after transportation, Closure of landfills, Sanitary landfill management, Equipment for sanitary disposal. Financial implications of the waste management methods. Practical lectures: During Practice examples from every field of waste management are presented and students are trained to work on software for modeling landfill processes. Practical lectures: During Practice the knowledge from the lectures is elaborated in detail using examples from the practice. Students are trained to work on software used in the field of waste management.

Required Reading:

1. Vujić, G., Ubavin, D., Stanisavljević, N., Batinić, B., Upravljanje otpadom u zemljama u razvoju, FTN Novi Sad 2012.
2. Christensen, T.H. Solid Waste Technology & Management, volume 1 & 2, Wiley Publication, United Kingdom, 2011.

3. Marina R. Ilić, Saša R. Miletić, Osnovi upravljanja čvrstim otpadom, Institut za ispitivanje materijala 1998.
4. Borislav Jakšić, Marina Ilić, Upravljanje opasnim otpadom, Urbanistički rzavod Republike Srpske, Banja Luka 2000.

Weekly Contact Hours: 5	**Lectures: 3**	**Practical work: 2**

Teaching Methods:

Lectures, Auditory Practice, Computer practice and Consultations.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	**Final exam**	points
Exersise attendance	5	written exam	70
Lecture attendance	5		
Test	10		
Test	10		