

<i>Title of the course:</i> Environmental hazards III. - Waste Management	<i>NEPTUN-code:</i> RKXKA3ABNE	<i>Weekly classes:</i> <i>lecture+practical work+lab work</i> 2+0+0	<i>Credit: 2</i> <i>Exam type: e</i> (written exam)
<i>Course leader:</i> Konrád Lájér, Dr.	<i>Position:</i> associate professor	<i>Required preliminary knowledge (with Neptun code):</i>	
<i>Curriculum:</i>			
<p>The aim of the course is to introduce students to waste management technologies. The subject provides a comprehensive knowledge of theoretical concepts, types of waste quantity and composition of the waste. Furthermore, in the frame of the course, expectations and conceptions of the European Union's waste management and the Sustainable Waste Management in Hungary will be taught.</p> <p>The subject deals primarily with sustainable management of waste materials and the available technologies that treat those materials successfully. Moreover, the course contains knowledge about technological solutions like emission streams. Part of the curriculum includes municipal solid waste, used (wreck) cars, electronic waste, batteries, rubber, plastic, glass, construction waste, packaging waste and other types of waste generated by industrial activity. Waste recovery, recycling as possible enemy solutions and the necessary preparation technologies will be presented as well. During the semester, we will examine how the composition of the various areas (residential, agricultural, industrial, etc.) influences waste and environmental impacts and sustainability principles in waste management. It shows the importance of the connection between waste management plan and the steps that are taken to deal with waste and its legal context as well. Waste collection, reloading and delivery of technological progress will be discussed in detail. The course describes the technological possibilities of disposing waste, such as orderly disposal, disposal of thermal and chemical processes or mechanical-physical processes.</p> <p>Main fields of the subject:</p> <ul style="list-style-type: none"> – environmental issues; waste as an environmental issue; applying environmental science to the management of waste; – managing legal issues and activities in the cleaning and waste industries; managing human resources in the cleaning and wastes industries; – mechanical, biological and thermal treatment of waste; – environmental laws of waste management; – contaminated land; landfill processes. 			
<i>Professional competencies:</i>			
<p>Comprehensive knowledge of the basic features and interrelations of environmental elements and systems, as well as of the environmentally harmful substances affecting them. Knowledge of major environmental technologies, equipment and structures associated with each technology, including the functioning and operation thereof.</p> <p>Able to perform basic tests of the quantity and quality characteristics of environmental elements and systems by state-of-the-art measuring instruments; to draw up and implement measurement plans; and to evaluate data.</p>			

Able to solve tasks of water, soil, air, radiation, and noise protection, as well as of waste treatment and processing at proposal level; to participate in preparing decisions; to perform authority audits; and to take part in the operation of these technologies.

Able to carry out assignments as environmental officer.

Able to carry out management duties subject to sufficient professional experience.

Able to reveal deficiencies in the technologies applied and process risks and to initiate mitigation measures after getting familiarized with the technology concerned.

Constantly upgrading their knowledge of environment protection by attending organized professional development training courses.

Literature:

Márton Herczeg: Municipal waste management in Hungary EEA project manager Almut Reichel ETC/SCP February 2013 Eurostat, 2012: 'Waste database municipal waste' <http://epp.eurostat.ec.europa.eu/portal/page/portal/waste/data/database> Accessed May 2012

European Commission (2012). Support to Member States in improving waste management based on assessment of Member States' performance. Screening Report. Screening of all EU Member States' waste management performance. DRAFT Version 1. 12 April 2012

Nijkerk, A.A., Dalmijn, W.L. : Handbook of Recycling Techniques (ISBN 90-802909-3-9). Nijkerk Consultancy February 2001, 5th Revised edition (pp.1-254)

Ram Chandra: Environmental Waste Management, 2015 by Taylor and Francis Group, U.S.