



SUBJECT DATASHEET

Semester:	2010/11/2
Subject:	Environmental Processes and Technologies
Code:	VEMKKVM116T
Responsible department:	Department of Environmental Engineering
Responsible department code:	MKKV
Responsible lecturer:	dr. Árpád Kárpáti

Educational objectives:

Basic knowledge of the protection of the different phases of the environment

Detailed content of the subject:

1. Potable water production - wastewater treatment: water softening with ion exchange and demineralization with reverse osmosis; disinfection without chlorine (safety chlorination); removal of organic residues in the water treatment process; removal of reduced and oxidised nitrogen forms with biological methods; nutrient removal in biological wastewater treatment and physico-chemical removal of theirs with simultaneous precipitation (Fe, Al, MAP).
2. Air pollution control: The role of material structural investigations (infrared spectroscopy, X-ray diffraction, thermo analysis methods etc.) in air pollution control, study of adsorbents, catalysts. The bases of mathematical modeling of air pollution control measures.
3. Waste management: The landfills, such as point sources of pollution. Pollution detection. The most important remediation methods.

Requirements:

Oral examination

Required and suggested references:

- Benedek P. - Valló S.: Vízisztítás, szennyvíztisztítás. Zsebkönyv 4. átdolgozott kiadás, MK, Budapest, 1990.
Lakossági szennyvizek aerob tisztítása eleveniszapos és más módszerekkel. Ismert-gyűjtemény No. 3. VE, KmKT Tanszék (2002), Összeállította Kárpáti Á.,
Sipos Zoltán: Ipari levegőtisztaság védelem. Műszaki Könyvkiadó, Budapest. 1987.
Seymour Calvert, Herold M. Englund: Handbook of air pollution technology, John Wiley & Sons, New York, 1984
Szabó Imre: Hulladékéelhelyezés, Miskolci Egyetemi Kiadó, Miskolc, 1999.
<http://www.ktm.hu/>, 2005-06-22