



## SUBJECT DATASHEET

<b>Semester:</b>	2009/10/2
<b>Subject:</b>	Air Pollution Control Practice
<b>Code:</b>	VEMKKVT222L
<b>Responsible department:</b>	Department of Environmental Engineering
<b>Responsible department code:</b>	MKKV
<b>Responsible lecturer:</b>	Dr. Tatiana Yuzhakova

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### Educational objectives:

The students become familiar with calculations applied in air pollution control processes, design of equipments used in air pollution control and equipment scaling methods. Earn practical knowledge of certain equipments functioning and factors influencing processes.

### Detailed content of the subject:

1. Determination of parameters of the gas carrying pollution. Measurement of absolute and relative pressure, determination of temperature. Measurement and calculation of velocity and volume flow rate of carrying gas. 2. Measurement of moisture of carrying gas, absolute and relative moisture content. Dry and wet temperature, dew point temperature. Usage of Ramzin-Molliere diagram. 3. Planning of dust separation equipment, calculation of size of dust chamber and cyclone dust collector. 4. Calculation of adsorption and absorption, equipment design taking into consideration the sizing characteristics 5. Condensation 6. Catalytic processes in the air pollution control, manufacturing of catalysts and their most important properties. 7. Factors influencing the rate of catalytic reaction, Thiele-modulus, efficiency factor. Catalytic reactor techniques. 8. Field trip 9. Written test 10. Methods for reducing of sulfur dioxide emission, their calculation, planning. 11. Methods for reducing nitrogen oxide emission, their calculation, planning. 12. Reducing of volatile organic compounds emission, calculation and process design 13. Calculation and planning of tail gas cleaning system of waste incineration 14. Reducing of hydrocarbon emission, reducing air pollution impact of odorous technology. Odour measurements. 15. Written test

### Requirements:

In case of unsatisfactory result the written test can be repeated one more time

### Required and suggested references:

Az oktató által összeállított és a hallgatók rendelkezésére bocsátott feladatsorok. Sipos Zoltán: Ipari levegőtisztaság védelem. Műszaki Könyvkiadó, Budapest. 1987. Woperáné, Serédi Ágnes: SO<sub>x</sub> és NO<sub>x</sub> emisszió csökkentése. Debrecen. 1991. Kenneth E. Noll, Vassilios Gounar: Adsorption Technology, Lewis Publishers, Chelsea, 1992. Ronald M. Heck, Robert J. Farrauto: Catalytic Air Pollution Control, Van Nostrand Reinhold, London, 1995. Seymour Calvert, Herold M. Englund: Handbook of air pollution technology, John Wiley & Sons, New York, 1984