UNIVERSITY OF PANNONIA

COURSE DATASHEET

Semester:	2012/13/2
Course:	Soil Science and Soil Chemistry
Code:	VEMKKVB212T
Responsible department:	Department of Environmental Engineering
Department code:	MKKV
Responsible instructor:	Dr. Erzsébet Horváth

Course objectives:

Studying of soil-components, their reactions with the contaminants; parameters influencing the accumulation and transport of the pollutants;

Course content:

1. Definition of soil; its main components; parameters of soil formation; 2. Weathering of rock; Different weathering processes; 3. Characterization of rock and mineral components in the soil; 4. The organic components of the soil; Formation of humic substances and their role in the process of soil formation; 5. Complexation, ion-exchange and redox properties of humic substances; 6. Soil colloids, processes on the colloid surfaces: adsorption, adhesion, cohesion and protolysis; 7. Acid-base properties of the soil; redox reactions; Cessation of colloid systems; 8. Reactions of pollutants in the soil; 9. The most important parameters influencing the mobility of the pollutants; 10. Structure of the soil; Pore-volume, wet, air, heat and nutriment circulation; 11. Classification of soils, destruction of the soil; 12. The basis of the soil mapping 13. The effects of cultivation, fertilization and irrigation for the soil; 14. Monitoring systems, data bases; 15. The effects of pollutants in the soil for environmental elements and ecosystem;

Requirements, evaluation and grading:

examination

Required and recommended readings:

Stefanovits Pál: Talajtan. Mezőgazdasági Kiadó, 1992. Filep György: Talajkémia. Mezőgazdasági Kiadó, 1991. Ulrich Förstner: Környezetvédelmi technika. Springer Hungarica Kiadó Kft. 1993.