UNIVERSITY OF PANNONIA

COURSE DATASHEET

Semester:	2012/13/2
Course:	Energetic analyses of chemical processes
Code:	VEMKMU2112A
Responsible department:	Department of Chemical Engineering Science
Department code:	MKMU
Responsible instructor:	dr. Géza Horváth

Course objectives:

Fundamentals of unit operations. Explanation from the point of energetic view, why and how do the unit operations work.

Course content:

1.-2. Introduction, world energy 3. Applications barriers of thermodynamic concepts 4. Transport possibilities on phase and molecular level 5. Coupled processes 6. Mechanical work, application in mixing 7. Static mixers 8. Examination paper I. 9. Heat, application in rectification 10.- 11. Chemical work, absorption, adsorption 12. Extraction and drying 13. Elution work, application 14. Energy networks 15. Examination paper II.

Requirements, evaluation and grading:

Examination Requirements, Questions: World energy, gas, oil, nuclear, coal, others, Energy from the point of practical and theoretical views Possibility of thermodinamics Energy transport on molecular and phase level Coupling possibilities Use of mechanical work Use of heat Use of chemical work Use of elution work Networks in practice

Required and recommended readings:

1. Technical Thermodynamics (Technische Termodinamik I-II.), Bosnjakovic F. (Steinkopf, Frankfurt) 1965, (Ger). 2. Thermostatics and Thermodynamics (Termosztatika és termodinamika), Fényes I., (Műszaki Kiadó Budapest) 1968. (Hung.) 3. Non-equilibrium Thermodynamics (Nemegyensúlyi termodinamika) Gyarmati J. (Műszaki Kiadó, Budapest), 1967., (Hung.) 4. Chemical Thermodynamics of Gases and Liquids (Gázok és folyadékok kémiai termodinamikája) Benedek P., Olti F. (TUSZI, Budapest) 1985. (Hung.) 5. Energetic Analysis of Unit Operations (Műveleti Egységek energetikai analizise) Szolcsányi P., (Műszaki Kiadó, Budapest) 1978, (Hung.) 6. Thermodynamic Principles of Chemical Engineering Calculations (A vegyészmérnöki számítások termodinamikai alapjai), Szolcsányi P. ed. (Műszaki Kiadó, Budapest) 1975. (Hung.)