UNIVERSITY OF PANNONIA

COURSE DATASHEET

Semester:	2012/13/1
Course:	Cleaner Technologies
Code:	VEMKKVM411T
Responsible department:	Department of Environmental Engineering
Department code:	MKKV
Responsible instructor:	Dr. Erzsébet Horváth

Course objectives:

The active environmental engineers should have ability the environmental damaging potential of the wastes produced by different technologies. The subject is a theoretical summary of the processes and methods developed to minimise environmental impact during the product production processes.

Course content:

1. Principle of the cleaner technology (CT). Connection to low waste technologies, cleaner production. Limits of use.
2. Theory of Best Available Technics (BAT) developing cleaner technologies. Case study.
3. Correlation the data aquisition systems of technological parameteres and cleaner technology.
4. Equipments and their development used in cleaner technological processes as basical items.
5. Connections equipments to each other: technological materials transport forms as a fact of CT.
6. Analogy and differency between waste minimization and cleaner technologies.
7. Economical demand for cleaner technologies: Case study.
8. Life cycles of production technological processes. Case studies for technology high environmental impact and develop to cleaner technology nowadays.
9. Spread out on Hungary of the Cleaner technologies and company's management systems
10. Applying of the Integrated Pollution Preventiona and Control (IPPC) for Cleaner technologies. Environmentally friend products

Requirements, evaluation and grading:

Individual case study and introduction, written examination

Required and recommended readings:

Chopey V.: Environmental Engineering in the Process Plant. McGraw Hill Inc. 1993 ISBN
Harry M. Freeman: Hazardous Waste Minimalization , McGraw Hill Inc. 1990, ISBN 007-022043-3
C McGrath, M Anderson: Waste minimisation on a construction site, 2000, ISBN: 186081400X
D. Huisingh: Cleaner Production: Theories, Concepts and Practice; Erasmus University Rotterdam, 1993

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Required and recommended readings:

Nelson L. Nemerow: Zero Pollution for Industry: Waste Minimization Through Industrial Complexes, John Wiley & Sons 1995, ISBN: 0-471-12164-9