



## COURSE DATASHEET

<b>Semester:</b>	2014/15/1
<b>Course:</b>	Design in petroleum industry
<b>Code:</b>	VEMKOLM256T
<b>Responsible department:</b>	Department of Hydrocarbon and Coal Processing
<b>Department code:</b>	MKOL
<b>Responsible instructor:</b>	dr. Zoltán Varga

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### Course objectives:

Estimation of properties of hydrocarbon streams. Selection and design of equipments applied in the hydrocarbon industries using shortcut methods and computer programmes. Showing of the application of equipments in the hydrocarbon technologies. Modelling of hydrocarbon technologies.

### Course content:

1. Crude assay, estimation of properties of hydrocarbon streams.
2. Introduction of thermodynamic methods applied in the hydrocarbon industries.
3. Estimation of blending of hydrocarbon streams.
4. Fired heaters in the hydrocarbon industries.
5. Hierarchy of the process design.
6. Documentation of the process design.
7. Simulation of a crude distillation unit; investigation of change of technology parameters I.
8. Simulation of a crude distillation unit; investigation of change of technology parameters II.
9. Simulation of a crude distillation unit; investigation of change of technology parameters III.
10. Simulation of a gas oil hydrotreater unit; investigation of change of technology parameters I.
11. Simulation of a gas oil hydrotreater unit; investigation of change of technology parameters II.
12. Simulation of a gas oil hydrotreater unit; investigation of change of technology parameters III.
13. Process design of a gas separation unit I.
14. Process design of a gas separation unit II.

### Requirements, evaluation and grading:

Attending of the lectures is compulsory. More than 40% of absenteeism has obliged the signature. The requirement of the signature is the minimum 25% fulfilment of the examination. Evaluation is done on the base of written examination. Less than 50% of the performance is insufficient, the grade of 85% and above marks 5.

### Required and recommended readings:

API Technical Data Book. Petroleum Processing; Watkins, R.N.: Petroleum refinery distillation. Gulf, Houston, 1979.;  
Tanszéki munkaközösség: Kőolajipari desztilláció, jegyzet;



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### Required and recommended readings:

Marton: Kőolajipari számítások III. egyetemi jegyzet 1996.;

Deák, Marton, Varga: Kőolajipari számítások;

Fábry György szerk.: ...Vegyipari gépészek kézikönyve”, Műszaki Könyvkiadó, Budapest, 1987;

E. E Ludwig,: ...Applied Process Design for Chemical and Petrochemical Plants, Volume 1-3”, Gulf Publishing Co. 1983;

Couper, J.R.: ...Chemical Process Equipment Selection and Design”, Butterworth-Heinemann, Oxford, 1990.;

Coulson & Richardson’s Chemical Engineering, Design Pergamon Press 1993, Volume 1-6 (Second Edition);

Mecklenburg, J. C. Process Plant Layout, George Godwin, London and New York, 1985.;

Seider, Seader, Lewin: product and Process Design Principles, 2004, Wiley;

Turton, Baille, Whithing, Shaeiwitz: Analysis, Synthesis, and Design of Chemical Processes, 2003, Prentice Hall;

Smith, R.: Chemical process design and integration, 2005, Wiley