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Verfahrenstechnik / Process Engineering
(ISE Bachelor of Mechanical Engineering)

Many products for daily life are produced in chemical processes designed by engineers. For instance, petrol is recovered by thermal separation of crude oil. Plastics are a chemical reaction product. Pharmaceuticals are combinations of compounds which are frequently synthesized by chemical or microbiological reactions. Process engineering also comprises pollutant removal from waste gas and waste water as well as material recycling in closed loops.
Based on theoretical fundamentals (material and energy balances, thermodynamic equilibrium) the focus of the lecture is on description and design of processes which are typical for a refinery:

- thermal separation processes
- treatment of process waters and waste water
- waste gas cleaning processes

The exercise provides example calculations for the fundamental relations as well as for the design of exemplary process steps.

scope :	2 HPW lecture, 1 HPW exercise (winter semester)
examination:	written exam (120 min.)
lecturers:	Dr. Ch. Pasel, Dr. R. Hobby

Textbooks:

U. Onken, A. Behr
Chemische Prozesskunde
Wiley-VCH (1996)

E.-U. Schlünder, F. Thurner
Destillation, Absorption, Extraktion
Vieweg Verlag (1998)

P. Kunz
Behandlung von Abwasser
Vogel-Verlag (1995)

J.D. Seader, E.J. Henley
Separation Process Principles
John Wiley (1998)

Figure: Ethylene plant (ROW Wesseling)