



# KE2070 Transport Phenomena, Advanced Course 7.5 credits

Transportprocesser, fortsättningskurs

This is a translation of the Swedish, legally binding, course syllabus.

## Establishment

Course syllabus for KE2070 valid from Autumn 2007

## Grading scale

A, B, C, D, E, FX, F

## Education cycle

Second cycle

## Main field of study

Chemical Science and Engineering, Chemistry and Chemical Engineering

## Specific prerequisites

KE1030 Transport phenomena and engineering thermodynamics

## Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

## Intended learning outcomes

To give the students advanced knowledge of momentum, heat and mass transfer of importance to in chemical engineering but also in areas such as environmental engineering, medicine and other scientific disciplines.

## Course contents

The course covers:

- Interface momentum transfer.
- Boundary layer theory.
- Flow around particles, droplets and bubbles.
- Two-phase flow.
- Unsteady heat transfer.
- Heat transfer from fluids to bodies.
- Unsteady diffusion.
- Interface mass transfer.
- Analogies between momentum, heat and mass transfer.
- Boundary layer theory applied to heat and mass transfer
- Multicomponent diffusion and influence of other driving forces.
- Simultaneous heat and mass transfer

## Course literature

Coulson J.M. and Richardson J.F., Chemical Engineering vol. 1, 6th ed, Butterworth Heinemann, 2000 and, vol 2, 5th ed., Butterworth Heinemann, 2002.

## Examination

- SEM1 - Assignments, 3.8 credits, grading scale: P, F
- TEN1 - Written exam, 3.7 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

## Other requirements for final grade

Computer assignment, 2.5 credits. Three examinations during the course or a final written examination, 2.5 credits.

## Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.