

COLLEGE OF CHEMISTRY COURSE GUIDE (../INDEX.HTML)

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CBE 150B - TRANSPORT AND SEPARATION PROCESSES (4 UNITS)

COURSE OVERVIEW

SUMMARY

This course is the second course of the 150 series. The course is split into two sections. The first third of the course covers mass transfer, which completes the coverage of transport processes beginning in 150A. The remainder of the course focuses on separation processes. More specifically, there is emphasis on the design of separation processes through graphical and numerical methods. For example, it is taught how to calculate the number of stages necessary in a distillation column. The course covers mostly binary separation processes. See the topics listed below.

PREREQUISITES

CBE 150A (cbe150a.html), CBE 141 (cbe141.html), and Engineering 7 (eng7.html)

TOPICS COVERED

- Mass transfer
 - Differential equations
 - Diffusion coefficients
 - Steady-state and unsteady-state molecular diffusion
 - Convective mass transfer
 - Simultaneous heat and mass transfer

- Separations
 - Thermodynamics of separations
 - Flash calculations
 - Adsorption/stripping
 - Distillation
 - Liquid-liquid extraction
 - Multicomponent separations
 - Membrane separations

WORKLOAD

COURSEWORK

- Weekly problem sets
- 2 Midterms
- 1 Final

TIME COMMITMENT

3 hours of lecture and 1 hour of discussion per week, ~6-8 hours per problem set per week.

CHOOSING THE COURSE

WHEN TO TAKE

The course is typically taken immediately after taking CBE 150A and CBE 141. The first third of the course covers mass transfer which continues the principles of transport processes covered in CBE 150A. The capstone chemE courses cannot be taken until this class is completed.

WHAT NEXT?

The three final required CBE courses can be taken after CBE 150B. These courses are CBE 160, 162, and 154. Furthermore, upper division CBE electives such as 171 (transport processes), 170A (biochemical engineering), and 180 (economics) list CBE 150B as a prerequisite.

ADDITIONAL COMMENTS AND TIPS

The discussion section and homework assignments help solidify the topics of the course. The separations portion is much more systematic than other CBE material we've had. In other words, there is often a step-by-step procedure to solving separations problems which is easy to master through practice problems.

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COLLEGE OF CHEMISTRY PEER SERVICES

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