

EEN-E2004 MASS TRANSFER 2023

Structure of the course

LECTURES

1. Tuesday 10.1 12:15-14:00
2. Tuesday 24.1 12:15-14:00
3. Tuesday 31.1 12:15-14:00
4. Tuesday 14.2 12:15-14:00
5. Tuesday 28.2 12:15-14:00
6. Tuesday 14.3 12:15-14:00

EXERCISE LESSONS

1. Friday 13.1 12:15-14:00
2. Friday 27.1 12:15-14:00
3. Friday 3.2 12:15-14:00
4. Friday 17.2 12:15-14:00
5. Friday 3.3 12:15-14:00
6. Friday 17.3 12:15-14:00

Note! No lectures 17.1 and no exercises 21.1.! (error in MyCourses)

Structure of the course

- **5 homework problems**: exercise lessons no. 2-6 include one homework problem each ($1/6=17\%$ of total course points)
- **3 large assignments** (33% of course points)
- **Exam** (50% of course points)

- **Maximum points** from course: 60 p
- **To pass the course**, **about** 20-22 overall points is needed **and** at least 6 (from 30) points from exam is needed
- Grade five **about** 48 (of 60) points

Teaching materials

- Textbook: Ari Seppälä & Markku Lampinen, Mass Transfer/Aineensiirto-oppi,
 - Electric copy of textbook (Finnish and English version) is available in MyCourses
 - or Printed version published by Yliopistokustannus (no. 605) (list of typos available on request)
 - Removed topics: sections 6.1, 11.1, 11.3, 11.4, 12
- Lecture slides
- Solutions of exercise problems (solutions of homework problems are not included, these solutions are shown during excercises)

General

- Mixture basics (Lecture 1)
- Diffusion (Lectures 1-2)
- Advection + diffusion = convection (Lecture 2)
- "Self-induced" convection: Stefan flow, natural/free convection (Lectures 2-3)
- Analogy between heat and mass transfer (Lecture 3)
- Mass transfer correlations and coefficients (Lecture 3)
- Coupled heat and mass transfer (Lecture 4)
- Mass transfer in porous/solid materials (Lectures 5-6)

Assignments

- Moisture movement and condensing of water vapor in building wall structures
- Enhanced cooling with wet surfaces
- Drying of porous material
- One of the above assignments can be replaced by your own topic

Need to ask something?

Ask during lectures and exercises

During other time, please contact:

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