

**CEN 3313**

**MASS TRANSFER**

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# CEN 3313

## MASS TRANSFER

### **COURSE OUTLINE**

Molecular mechanism of mass transfer. Fick's law. Transport of mass in one dimension by molecular mechanism and by convection. Diffusion and mass transfer coefficients. Interphase mass transfer. Analogies between momentum, heat and mass transfer. Physical significance of dimensionless numbers in momentum, heat and mass transfer. Principles of stage-wise and continuous contact operations. Applications and design of separation process units.

### **INTRODUCTION**

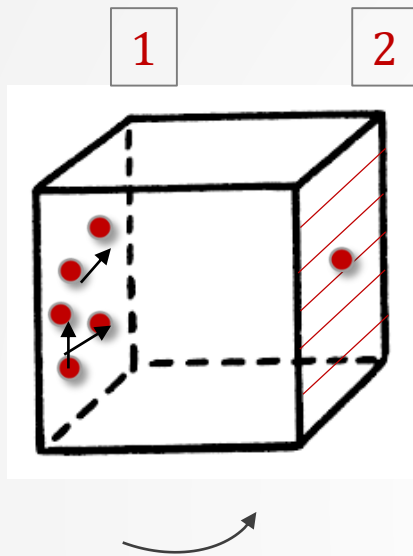
## TEXTBOOK & REFERENCE BOOKS

Geankoplis, C.J., Transport Processes and Separation Process Principles, Prentice-Hall, Pearson Education, 2003

Incropera F. P., Dewitt D. P. , Bergman T.L., Lavine A.S., Fundamentals of Heat and Mass Transfer, John Wiley & Sons Inc.

Middleman S., An Introduction to Mass and Heat Transfer: Principles of Analysis and Design, John Wiley, High Education, 1997.

Cussler E.L., Diffusion :Mass Transfer in Fluid Systems, Cambridge University Press, 3<sup>rd</sup> Edition, 2009.



Amount of molecules

time

**How do you maximize the amount of molecules/time?**

**Reduce the thickness???**

**Use a smaller molecule???**

**Increase the pressure???**

**Increase the surface area???**