



MUTAH UNIVERSITY  
Faculty of Engineering  
Department of Chemical Engineering



## Mass Transfer

### COURSE SYLLABUS

Course Code	Course Name	Credits	Contact Hours
0404437	Mass Transfer	3	48

#### INSTRUCTOR/COORDINATOR

Name	Dr. Mohammad A. Aliedeh
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#### TEXTBOOK

Welty, J. R., Rorrer, G. L., & Foster, D. G. (2015). Fundamentals of momentum, heat, and mass transfer. Sixth Edition, Hoboken, NJ: John Wiley & Sons.

#### SPECIFIC COURSE INFORMATION

##### A. Brief Description of the Content of the Course (Catalog Description)

Molecular diffusion, diffusion coefficient, mass transfer coefficient, convective mass transfer, analogy between momentum, heat and mass transfer, mass transfer across interface, equipment for gas-liquid mass transfer operations.

##### B. Pre-requisites (P) or Co-requisites (C)

Heat Transfer 0404430 (P)

##### C. Course Type (Required or Elective)

Required (Compulsory Department Course)

## SPECIFIC GOALS

### A. Specific Outcomes of Instruction

By the end of this course, the student should be able to:

1. Understand the **fundamentals of Mass Transfer**. (SLO 1)
2. Understand the **differential Equations of Mass Transfer**. (SLO 1)
3. Understand the **Steady-State Molecular Diffusion**. (SLO 1)
4. Understand the **Unsteady-State Molecular Diffusion**. (SLO 1)
5. Understand **convective mass transfer**. (SLO 1)
6. Understand **convective mass transfer between phases**. (SLO 1)
7. Understand **convective mass transfer correlations**. (SLO 1)
8. Understand the different types of **Mass Transfer Equipments**. (SLO 1, 2)
9. Preliminary **Design of a Mass Transfer Equipment**. (SLO 1, 2)

### B. Student Learning Outcomes (SLOs) Addressed by the Course

1	2	3	4	5	6	7				
✓	✓									

## BRIEF LIST OF TOPICS TO BE COVERED

List of Topics	No. of Weeks	Contact Hours
• Fundamentals of Mass Transfer	1	3
• Differential Equations of Mass Transfer	1	3
• Steady-State Molecular Diffusion	2	6
• Unsteady-State Molecular Diffusion	2	6
• Convective mass transfer	2	6
<b>Mid Term Exam</b>	<b>1</b>	<b>3</b>
• Convective mass transfer between phases	3	9
• Mass Transfer Equipments	1	3
• Preliminary Design of a mass Transfer Equipment	2	6
<b>Final Exam</b>	<b>1</b>	<b>3</b>
<b>Total</b>	<b>16</b>	<b>48</b>

## METHODS OF ASSESSMENT

No.	Method of assessment	Week and Date	%
1	1 <sup>st</sup> Examination	5th week	20
2	2 <sup>nd</sup> Examination	10th week	20
3	Homeworks	Homework/week	10
4	Online final examination	End of Semester	50
Total			100