



**KAMPALA INTERNATIONAL UNIVERSITY,**

**MAIN CAMPUS KAMPALA**

**SCHOOL OF NATURAL AND APPLIED SCIENCES (SONAS)**

**DEPARTMENT OF PHYSICAL SCIENCES**

**Study Guide for BSc. Industrial Chemistry**

**ICH 3106 MASS TRANSFER II**

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## **Introduction**

**MASS TRANSFER II (ICH 3106)** is a 4-credit unit module for students studying towards a Bachelor's of science in Industrial Chemistry. The course is divided into 12 study units. This course will provide an overview on mass transfer at basic to an intermediate level. This course applies the concepts of diffusion and interphase mass transfer to the analysis of different unit operations such as humidification, drying, adsorption, extraction, leaching, crystallization and membrane processes. The course synthesizes fundamental concepts and analytical skills to understand mass transfer operations and to tackle the sort of complex problems; you are welcome to one of the interesting courses you will offer during your study in KIU.

## **Recommended Study Time**

This course is a 4-unit course divided into 12 study units. You are enjoined to spend at least 3 hours in studying the content of each study unit.

## **Course Aim**

At the end of the module students should be able to: designed to give students the knowledge on theories in mass transfer, technical skills in handling equipments commonly used in mass transfer, skills in designing mass transfer equipments like cooling towers.

## **Course Objectives**

By the end of the course students should be able to:

- To teach students the theories in mass transfer.
- To familiarize students with equipments commonly used in mass transfer.
- To teach students how to design mass transfer equipments like cooling towers.

## **Working through this course**

## **ICH 3106 MASS TRANSFER II**

In order to have a thorough understanding of the course study units, you will need to practice all the self review exercise in this Study guide.

This course is designed to be cover approximately with in fifteen weeks and it will require your devoted attention. You should do all the assignments and submit with in the fourteen weeks of the study

### **Teaching – Learning Materials**

- Course Guide
- Group discussion and interpretation of observations
- Printed Lecture materials
- Text Books
- Interactive DVD and Tapes
- Electronic Lecture materials via LMS
- Tutor Marked Assignments
- Whiteboard and markers
- Lecture and discussion
  
- Documentaries

The printed lecture material consists of 8 study units broken down into sub-units

### **References and Additional Reading Materials**

1. R. E. Treybal “Mass Transfer Operations”, McGraw –Hill International Edition, 3rd Ed., 1981.
2. W. L. McCabe, J. Smith and P. Harriot, "Unit Operations of Chemical Engineering", 6th Ed., McGraw – Hill International Edition, 2001.
3. B.K. Dutta, Principles of Mass transfer and separation processes, 1st Ed., PHI, 2012.

### **Assessment**

## **ICH 3106 MASS TRANSFER II**

There are two aspects to the assessment of this course. First, there are tutor marked self-review exercise and second the written final exam. Therefore, you are expected to do all the end of unit exercise during the course. The work out exercise must be submitted to your tutor for formal assessment in accordance to the deadline given. The worked-out exercise submitted and CATs will count for 40% of your total course mark. At the end of the course, you will need to sit for a final written exam. This examination will account for 60% of your total score.

### **Tutor-Marked Exercise (TME)**

There are TME in this course. You need to submit all the TME. The best 8 will therefore be counted. When you have completed each exercise, submit them to your tutor as soon as possible and make certain that it gets to your tutor on or before the stipulated deadline. If for any reason you cannot complete your exercise on time, contact your tutor before the exercise is due to discuss the possibility of extension. Extension will not be granted after the deadline, unless on extraordinary cases.

### **Final Examination and Grading**

The final examination for ICH3106 will last for a period not more than 3 hours and has a value of 60% of the total course grade. The examination will consist of 7 questions which reflect the end of unit exercise, Final examinations will be conducted either via the University examination hall