

Scale-Up of Chemical Engineering Process

Course Introduction

by
Nurul Sa'aadah Sulaiman

Faculty of Chemical and Natural Resources Engineering
saaadah@ump.edu.my



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Chapter Description

- **Aims**

This subject covers the aspects of scale-up of chemical and biological processes and commercialization. The course introduces the basic concept and application of scale-up of chemical and biotechnology-related processes. The topics covered in this subject are introduction to the theory of scale-up; modelling and simulation; pilot plant; reactor scale-up; unit operation scale-up; fine/specialty chemical processes scale-up.

- **Expected Outcomes**

- Acquire the analytical and modelling skills required for conversion of lab scale processes to commercial scale.
- Master the basic fundamentals of scale-up theory and commercialization of R&D.
- Apply the knowledge of scale up for industry and society.



- **References**

- Attilio Bisio and Robert L. Kabel 'Scale-up of Chemical Processes' John Wiley and Sons
- Jacob A. Moulijn, Michiel Makkee and Annelies Van Diepen 'Chemical Process Technology' John Wiley and Sons
- Various Authors Articles related to Scale-up
- Marko Zlokarnik 'Scale-up in Chemical Engineering' John Wiley and Sons

Content

- Chapter 1: Introduction of Scale-up Processes
- Chapter 2: R&D and Commercialization
- Chapter 3: Review of Chemical and Bio Processes
- Chapter 4: Overview on Mathematical Modeling in Chemical Engineering
- Chapter 5: Mathematical Modeling Strategy in Chemical Engineering
- Chapter 6: Simulator
- Chapter 7: Industrial Case Study



Author Information

Credit to the author:

Prof Ir Dr Badhrulhisham Abdul Aziz