



In The Name of God

ISFAHAN UNIVERSITY OF TECHNOLOGY
CHEMICAL ENGINEERING DEPARTMENT

The 1st Term 1400-1

Advanced Reactor Design (14-10-515-01)

Lecturer: Arjomand Mehrabani-Zeinabad, <https://Mehrabani.iut.ac.ir/fa>

Contents:

- A Review on Kinetics of Reactions & Design of Single Phase Reactors
- Effects of Temperature and Pressure in Reactors
- Non-Ideal Flow Models
- Compartment Model
- Tank in Series Models
- Introduction to Heterogeneous Reactions
- Solid Catalyzed Reactions
- Catalyst Deactivation
- Kinetics of Multi-Phase Reactions
- Multi-Phase Reactions in Reactors
- Packed Bed Catalytic Reactor

References:

- Chemical Reaction Engineering, 3rd Ed., O. Levenspiel, 1998.
- Fundamentals of Chemical Reaction Engineering, C.D. Holland, R.G. Anthony, 2nd Ed., 1989.
- Chemical Engineering Kinetics, 2nd Ed., J.M. Smith, 1991.
- Introduction to Chemical Engineering Kinetics & Reactor Design, C.G. Hill, 1977.
- Elements of Chemical Reaction Engineering, H. S. Fogler, 5th Edition, 2016.
- Introduction to Chemical Reaction Engineering & Kinetics, R.W. Missen, C.A. Mims, B.A. Saville, 1999.
- Chemical Reactor Design and Operation, K.R. Westerterp, W.P.M. van Swaaij, A.A.C.M. Beenackers, 1984.
- Chemical Reactor Analysis and Design, G.F. Froment, K.B. Bischoff, 2nd Ed., 1990.

Course Evaluation:

Assignments: 5-10%

Mid. Term Exam. : 40-45%,

Final Exam. : 45-50%.

Mid. Term Exam.: 1400/9/23.