

CH308 CHEMICAL REACTION ENGINEERING – I
Credits: 5 (L = 4, P = 2)
(Pre-requisite: None)

Course Details:

Classification of chemical reactions:

Rates of reactions, Order and rate constant, mechanism of reactions, Collection & interpretation of kinetic data. Rates of complex reactions. Temp. & Pressure effects.

Classification of chemical reactors, mass & energy balances for homogeneous, batch,:

Adiabatic and non-iso thermal operations. Design for single and multiple reactions. Recycle and Semi batch reactor.

Design for multiple reaction and reactor system:

Series and parallel network of plug flow and CSTR for single and multiple reactions.

Non-ideal reactors:

Flow patterns in non-ideal reactors. Residence time distribution F, E, and C curves. Conversion from non-ideal reactors. Network of non-ideal reactors.

Detail 5:

Non iso-thermal reactors and optimum temperature progressions

Reference Books:

Chemical Reaction Engineering:

Wiley Eastern

Octave Levenspiel

Chemical Engineering Kinetics - 2nd ed:

Mc Graw Hill

J M Smith

Chemical Engineering kinetics & Reactor Design:

J Wiley Publication

C G Hill