

Lecture #1.1

Chemical Reaction Engineering (CHE331A, 9 credits) Pre-req ESO201A

GOUTAM DEO

CHEMICAL ENGINEERING

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Discussion hour: Wednesday 14:00 to 15:00
Announced quizzes also during the discussion hours

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e-mail for sending your undertaking: che331a@gmail.com

e-mail for other offline submissions: MooKIT OR che331a@gmail.com



Grading policy and conduct of course



- ▶ **Grading will be relative and based on:**
 - ❑ Attendance + participation – based on online information
 - ❑ Quizzes (3) – online
 - ❑ MS exam – online+ offline submission (MooKIT/che331a@gmail.com)
 - ❑ Homework (about 8) – 6 offline submissions (as above)
 - ❑ End semester (1) – online + offline submission (as above)
 - ❑ Grade distribution – online 40% and Offline 60%
- ▶ **Taking the End-Sem examination is a must to pass this course**
- ▶ **Unethical means of any kind will be penalized**
 - ❑ Undertaking to be taken and sent to che331a@gmail.com
- ▶ **Additional details given in first course handout – Please read it**



Contents of CHE331A (till mid-sem)

- ▶ Introduction
- ▶ Basic Concepts in Reactor Design
 - Ideal reactors
- ▶ Collection and Analysis of Rate Data
- ▶ Nonelementary Homogeneous Reactions
- ▶ Isothermal Reactor Design
- ▶ Design for Multiple Reactions (Isothermal)



... and some More (2nd half)

- ▶ **Nonisothermal Reactors**
- ▶ **Nonideal flow**
- ▶ **Catalysis**
- ▶ **Kinetics of Catalytic Reactions**
- ▶ **Diffusion and Reaction in Porous Catalysts**



Books/Material for the course

► Text Book

- H. Scott Fogler, 'Elements of Chemical Reaction Engineering', 4th edition, 2006, Prentice-Hall of India, New Delhi.

► Other references:

- O. Levenspiel, 'Chemical Reaction Engineering', 3rd edition, 1999, Wiley-Eastern Ltd.
- J.M. Smith, "Chemical Engineering Kinetics," 3rd edition, 1981, McGraw-Hill, International Student Edition.

