Fall 2018

# CHE 312 - Chemical Process Safety

Thomas Devine

# ChE612, Chemical Kinetics and Reactor Design

Fall 2018 Syllabus, NJIT

**Time and Location**: Monday, 6pm-9pm --- Kupfrian Hall 203

**Instructor**: Mirko Schoenitz,
Email: schoenit@njit.edu
Phone: office 973-596-5260, cell 609-902-3445
Course materials: http://moodle.njit.edu
Office hours, Mo-Fr 10am-5pm only by prior appointment

**Teaching assistant** TBA

**Textbook, required**: Elements of Chemical Reaction Engineering (5th ed),
H. Scott Fogler, Prentice Hall, ISBN: 0-13-388751-0

**Exams**: Two Midterm exams, One Final exam, One Term Project
Exams are open book/open notes. Exams are cumulative.
The exams and the term project each count for 25 % of the final grade.

**Grading**: 100-90 %: A 89-80 %: B+ 79-70 %: B
69-60 %: C+ 59-50 %: C < 50 %: F

| Date | Topics | Assigned reading |
|---|---|---|
| | | |
| 10-Sep | Introduction and review of undergraduate material | Review of chapters 1 – 3 |
| 17-Sep | --"-- | Review of chapters 4 – 6 |
| 24-Sep | Steady state energy balance | Sections 11.1 - 11.5. 12.1 - 12.4 |
| 1-Oct | Unsteady state energy balance | Sections 13.1 - 13.4 |
| 8-Oct | Midterm 1 | |
| 15-Oct | Data analysis and Multiple reaction systems | Sections 7.1-7.4, 8.1-8.4, 8.6 |
| 22-Oct | Non-elementary reactions, Bio-/enzymatic reactions | Sections 9.1-9.3 |
| 29-Oct | Assignment of term project | |
| 5-Nov | Heterogeneous catalysis | Sections 10.1-10.4, 10.7, 5.5 |
| 12-Nov | Diffusion and Mass transfer in catalysis | Sections 14.1-14.4, 15.2-15.3 |
| 19-Nov | Midterm 2 | |
| 26-Nov | Non-ideal reactors | Chapter 16 |
| | progress memo for term project due | |
| 3-Dec | Segregated flow, mixing, dispersion | Sections 17.1-17.2 |
| 10-Dec | Reactor combinations | Sections 18.1-18.2 |
| | term project due | |
| 15-Dec – 21-Dec (expected Monday, 17-Dec) | Final exam | |