

Fall 2018

# CHE 612 - Chemical Kinetics and Reactor Design

Mirko Schoenitz

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# 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	