

CHEN 4460 – LECTURE PLAN

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(Updated August 21, 2011)

All page references are for Seider, W.D., J.D. Seader, and D.R. Lewin “Product and Process Design Principles”, 2nd Edition Wiley, 2008 (SSL) unless otherwise noted.

Date	Topic	Reading	Homework Due
8/23	#1: Course Introduction and Overview <ul style="list-style-type: none"> Introducing Simulation Multimedia Package Introducing Design and Synthesis Process 	SSL Chapter 1 Pages 3-41	
8/30	#2: Process Creation <ul style="list-style-type: none"> Preliminary Database Creation Preliminary Process Synthesis Development of Base-Case Design 	SSL Chapter 3 Pages 62-85, 96-105	
9/6	#3: Heuristics for Process Synthesis <ul style="list-style-type: none"> Chemical Reaction Mixing and Recycle Separation Temperature, Pressure and Phase Change Task Integration 	SSL Chapter 5 Pages 161-200	#1: 3.1, 3.2, 3.3, 3.4
9/13	#4: Algorithmic Methods for Process Synthesis – Part I <ul style="list-style-type: none"> Reactor Design and Reactor Network Synthesis Synthesis of Separation Trains 	SSL Chapter 6+7 Pages 205-248	#2: 4.1, 4.2
9/20	#5: Algorithmic Methods for Process Synthesis – Part II <ul style="list-style-type: none"> Sequencing of Ordinary Distillation Columns 	SSL Chapter 7 Pages 248-258	#3: 5.1, 5.2, 5.3
9/27	#6: Review of Thermodynamics of Non-Ideal Mixtures <ul style="list-style-type: none"> Azeotropy Residue Curves Distillation Boundaries 	SSL Chapter 7 Pages 258-271	#4: 7.1, 7.2, 7.3
10/4	#7: Algorithmic Methods for Process Synthesis – Part III <ul style="list-style-type: none"> Separation of Non-Ideal Mixtures 	SSL Chapter 7 Pages 271-299	#5: 7.14b-d, 7.15
	Review for Midterm Exam		
10/11	Midterm Exam		
10/18	AIChE Annual Meeting, Minneapolis, MN		
10/25	#8: Mathematical Optimization <ul style="list-style-type: none"> Solution of LP, NLP, MILP, MINLP Introducing LINGO Solver Software 	SSL Chapter 18 Pages 616-643	
11/1	#8: Heat and Power Integration - Targeting <ul style="list-style-type: none"> Temperature Interval Method Composite Curve Method Thermal Pinch Analysis 	SSL Chapter 10 Pages 302-316	#6: 18.1 + Handout
11/8	US-China Chemical Engineering Conference		#7: 10.1a, 10.2a, 10.2b
11/15	#10: Heat and Power Integration – Network Design <ul style="list-style-type: none"> Maximum Energy Recovery Networks 	SSL Chapter 10 Pages 316-346	#8: 10.1b, 10.2c
11/22	Thanksgiving Holiday		
11/29	Class Review		
12/7	Final Exam		

NOTE:

If normal class and/or lab activities are disrupted due to a high number of students experiencing illness or an emergency or crisis situation (such as a widespread H1N1 flu outbreak), the syllabus and other course plans and assignments may be modified to allow completion of the course. If this occurs, an addendum to your syllabus and/or course assignments will replace the original materials.