CHEN 4460 – LECTURE PLAN

Dr. Mario Richard Eden
(Updated August 21, 2011)

All page references are for Seider, W.D., J.D. Seader, D.R. Lewin, and S. Widagdo "Product and Process Design Principles", 3rd Edition Wiley, 2008 (SSLW) unless otherwise noted.

Date	Topic	Reading	Homework Due
8/23	**#1:** Course Introduction and Overview • Introducing Simulation Multimedia Package • Introducing Design and Synthesis Process	SSLW Chapter 1 Pages 1-31	
8/30	**#2:** Process Creation • Preliminary Database Creation • Preliminary Process Synthesis • Development of Base-Case Design	SSLW Chapter 4 Pages 77-94, 101-109	
9/6	**#3:** Heuristics for Process Synthesis • Chemical Reaction • Mixing and Recycle • Separation • Temperature, Pressure and Phase Change • Task Integration	SSLW Chapter 6 Pages 152-180	**#1:** 4.1, 4.2, 4.3, 4.4
9/13	**#4:** Algorithmic Methods for Process Synthesis – Part I • Reactor Design and Reactor Network Synthesis • Synthesis of Separation Trains	SSLW Chapter 7+8 Pages 181-216	**#2:** 5.1, 5.2
9/20	**#5:** Algorithmic Methods for Process Synthesis – Part II • Sequencing of Ordinary Distillation Columns	SSLW Chapter 8 Pages 216-223	**#3:** 6.1, 6.2, 6.3
9/27	**#6:** Review of Thermodynamics of Non-Ideal Mixtures • Azeotropy • Residue Curves • Distillation Boundaries	SSLW Chapter 8 Pages 223-230	**#4:** 8.1, 8.2, 8.3
10/4	**#7:** Algorithmic Methods for Process Synthesis – Part III • Separation of Non-Ideal Mixtures Review for Midterm Exam	SSLW Chapter 8 Pages 230-251	**#5:** 8.14b-d, 8.15
10/11	Midterm Exam		
10/18	AIChE Annual Meeting, Minneapolis, MN		
10/25	**#8:** Mathematical Optimization • Solution of LP, NLP, MILP, MINLP • Introducing LINGO Solver Software	SSLW Chapter 24 Pages 642-661	
11/1	**#9:** Heat and Power Integration - Targeting • Temperature Interval Method • Composite Curve Method • Thermal Pinch Analysis	SSLW Chapter 9 Pages 252-261	**#6:** 24.1 + Handout
11/8	US-China Chemical Engineering Conference		**#7:** 9.1a, 9.2a, 9.2b
11/15	**#10 :**Heat and Power Integration – Network Design • Maximum Energy Recovery Networks	SSLW Chapter 9 Pages 261-280	**#8:** 9.1b, 9.2c
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.