

## FABE 481 Introduction to Food Engineering Syllabus Spring 2004

Week	Date	Topic	Textbook
1	3/29	Introduction, flow chart	
	3/31	Units, unit conversions	2.1, 2.2
	4/2	Dimensional analysis	2.3
	4/2	Recitation	
2	4/5	Force, pressure	2.2
	4/7	Temperature	3.11, 3.1.2
	4/9	Ideal gas law	3.2
	4/9	Recitation	
3	4/12	Composition, Material balance single stage	4.1, 4.2
	4/14	Material balance, multiple stage, recycle, bypass	4.2
	4/16	Material balance reaction, unsteady state	4.2
	4/16	Recitation	
4	4/19	Heat capacity, sensible heat, latent heat	4.4
	4/21	Steam tables	4.4
	4/23	Energy balance	4.5
	4/23	Recitation, use of Excel for matrix operations	
5	4/26	Simultaneous heat and mass balance	4.5
	4/28	Psychrometrics	9.1, 9.2
	<b>4/30</b>	<b>Exam 1</b>	
	4/30	Material balance laboratory	Lab 1
6	5/3	Psychrometrics	9.3, 9.4, 9.5
	5/5	Transfer processes, fluid flow	Chap 5
	5/7	Viscosity, Types of fluid flow, non-Newtonian fluids	6.1, 6.2.1, 6.2.2, 6.7
	5/7	Recitation	
7	5/10	Pressure drop in pipes	6.3, 6.4
	5/12	Mechanical energy balance, Bernoulli equation	6.2.4
	5/14	Friction factor, friction losses in pipes, pumps	6.4, 6.6
	5/14	Recitation	
8	5/17	Mixing	14.1
	5/19	Modes of heat transfer	7.1
	5/21	Conduction, steady state heat transfer	7.2
	5/21	Pressure drop laboratory	Lab 2
9	5/24	Convection heat transfer, overall heat transfer coefficient	7.3
	5/26	Heat exchanger	7.4
	5/28	Unsteady state heat transfer	7.7
	5/28	Heat exchanger lab	Lab 3
10	<b>5/31</b>	<b>Memorial Day</b>	<b>No class</b>
	<b>6/2</b>	<b>Exam 2</b>	
	6/4	Freezing, Refrigeration	11.1, 2, 3, 4, 5, 7
	6/4	Review for final exam	

**Final exam:** Monday, June 7, 2004

7:30 AM - 9:18 AM.