

January

ChBE 445-545: Biochemical Engineering

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
		1	2	3	4	5
6	7	8	9 Classes Begin Biological Systems Discussion Bioengineer Types, Introduction	10	11 Ch 1, Ch 2.1 Cells & Structures in Biology	12
13	14 Ch 2.3 Cell Types, Nutrients Introduction to Types of Biomolecules	15	16 Ch 2.2.3 - 2.2.4 Biomolecules: Lipids	17	18 Ch 2.2.2, 2.2.3 Biomolecules: Carbohydrates	19
20	21 MARTIN LUTHER KING, JR. HOLIDAY No Class	22	23 Ch 2.2 Biomolecules: Amino Acids, Proteins, Structure	24	25 Ch 2.2.2 Protein Function, Ionization, Enzymes, Stability	26
27	28 Ch 2.2 Proteins, Isoelectric Point Nucleic Acids	29	30 Ch 2 Nucleic Acids, Artificial Biomolecules	31		

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February

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<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
					1 Ch 3.1, 3.2 Enzyme Classification & Examples of Enzyme- Catalyzed Reactions	2
3	4 Ch 3.2, 3.6 Enzyme Reaction Kinetics: Michaelis-Menten, Lineweaver- Burk Plots	5	6 Ch 3.3.1-3.3.3 Michaelis-Menten Kinetics: Rapid Eqm Analysis	7	8 Ch 3.3.1-3.3.4 Michaelis-Menten Kinetics: Quasi-Steady State Analysis	9
10	11 Ch 3.3.4, 3.4 Rapid Eqm vs. QSSA Kinetics Enzyme Inhibition Types	12	13 Ch 3.4 Enzyme Inhibition Analysis, Enzyme Stability (T & pH)	14	15 Ch 3.4 Immobilized Enzymes	16
17	18 Ch 3.4 Immobilized Enzymes	19	20 Review for EXAM 1	21	22 <i>EXAM 1:</i> Ch 1-3	23
24	25 Ch 5.1, 5.2 Complex Enzyme-Catalyzed Systems (Living Systems) Stoichiometry, Anabolism, Catabolism	26	27 Ch 5.1, 5.2 Classification of Organisms by Energy and Food Sources, Stoichiometry	28	29 Ch 5.2 Metabolic Pathways and Energetics	

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March

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<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
						1
2	3 Ch 5.2 Glucose Metabolism TCA & EMP Pathways	4	5 Ch 5.4 Respiration, Anaerobic Metabolism, Partial Metabolism & Fermentation	6	7 Ch 6.1, 6.2 Batch Cell Growth Growth Phases	8
9	10 Ch 6.1-6.3 Batch Cell Growth, Yield Coefficients, Diauxic Growth	11	12 Ch 6.2-6.3 Growth Coefficients, Carbon Sources, T & pH Effects on Cell Growth, Cell Death Kinetics	13	14 Ch 6.2, 6.3, 7 Limiting Reactants in Cell Reactors	15
16	17 SPRING BREAK	18	19 SPRING BREAK	20	21 SPRING BREAK	22
23	24 Ch 6.3.2, Ch 7 Cell Growth Reactors Oxygen Transfer ; Cell Growth Model: Monod Equation	25	26 Ch 7,10 Reactor Types, Steady State Operation <i>Last Day to Drop with a "W"</i>	27	28 Ch 7,10 Chemostats, Oxygen Transport	29
30	31 Ch 7 Cell Production in Chemostat Reactors					

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April

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<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
		1	2 EXAM 2: Ch 5,6,7,10	3	4 Ch 11: Bioseparation Techniques Purification Methods Intro	5
6	7 Ch 11: Separation & Biotechnology Techniques:	8	9 Ch 11: Separation & Biotechnology Techniques	10	11 Ch 11: Separation & Biotechnology Techniques	12
13	14 Ch 4, 8 DNA Organization, Codons, Mutations, Genetic Engineering	15	16 Ch 4,8 Genetics	17	18 HONORS DAY (NO CLASS)	19
20	21 Special Topics will be selected from those not presented in Term Papers: Pharmaceutical Processing and Laws, Drug Delivery, Bioremediation, Genomics/Proteomics, Gene Therapy, Tissue Engineering, Biomaterials, Bioethics...	22	23 445: Topic Infosheets Due Special Topics	24	25 545/H: Term Papers Due 545/H Student Presentations	26
27	28 545/H Student Presentations	29	30 545/H Student Presentations		May 2 Student Presentations; Semester Review	

May 7th: Final Exam: 11:30 - 2:00

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May

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<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
				1	2 Student Presentations; Semester Review	3
4	5	6	7 FINAL EXAM 11:30 - 2:00 Cumulative: Ch 1,2,3,4,5,6,7,8, 10,11 PLUS Presentations	8	9	10 Commencement
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

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