Chem 1120 **Essentials of General, Organic, and Biochemistry** **Dr. Walker, Spring, 2017**

Proposed Course Schedule

Week	*Date*	*Topic*	*Text Reading*
1 M	1/9	Introduction and Course Overview; Alcohols: structure and nomenclature	14.1-.5
T	1/10	Important alcohols: methanol, ethanol, isopropyl alcohol (IPA), glycols	14.6-.9
W	1/11	Properties and reactions of alcohols	14.10-14.13
F	1/13	Phenols, ethers, thiols	14.14-.21
2 M	1/16	*Martin Luther King Day Holiday*	
T	1/17	The carbonyl functional group: aldehydes and ketones	15.1-.4
W	1/18	Naming aldehydes and ketones; physical properties	15.5-.8
F	1/20	Chemical reactions of ketones and aldehydes	15.9-.11
3 M	1/23	Carboxylic acids: structure, physical properties, acidity, salts	16.1-.8
T	1/24	Reactions of carboxylic acids; esters: structure and properties	16.9-.12
W	1/25	Chemical reactions of esters; polyesters	16.13-.16
F	1/27	Sulfur analogs of esters, acid chlorides and anhydrides, inorganic esters	16.17-.20
4 M	1/30	Review for exam	14, 15, 16
T	1/31	**First Hour Exam**	**14, 15, 16**
W	2/1	Review exam; Nitrogen atoms in organic compounds, amine structure	17.1-.2
F	2/3	Properties of amines, reactions with acids, alkylation, heterocyclic amines	17.3-.9
5 M	2/6	Biologically important amines; alkaloids	17.10-.12
T	2/7	Amides: preparation reactions, properties, hydrolysis, caffeine, nicotine	17.13-.18
W	2/8	Biochemistry: An Overview	18.1-.6
F	2/10	Carbohydrates; chirality, mono-, di-, oligo-, polysaccharides	18.7-.14
6 M	2/13	Lipids: structure, properties of fatty acids, dietary considerations, reactions	19.1-.5
T	2/14	**Membranes: phospholipids, sphingolipids, cholesterol**	**19.6-.10**
W	2/15	Waxes, saponification, fats, steroids, anti-inflammatory drugs	19.11-.15
F	2/17	Proteins: amino acids, essential amino acids, chirality, acid-base properties	20.1-.5
7 M	2/20	Presidents' Holiday	
T	2/21	Peptides: Levels of protein structure	20.6-.13
W	2/22	Reactions of proteins: hydrolysis and denaturation, glycoproteins	20.14-20.19
F	2/24	Proteins in hair, foods, drugs and disease	
8 M	2/27	Review for exam	
T	2/28	**Second Hour Exam**	**17, 18, 19, 20**
W	3/1	Review exam; Introduction to enzymes	21.1-.2
F	3/3	Factors influencing enzyme activity	21.3-.8
9 M	3/6	*Spring Break*	
T	3/7	*Spring Break*	
W	3/8	*Spring Break*	
F	3/10	*Spring Break*	
10 M	3/13	Regulation of enzyme activity, prescription drugs that affect enzymes	21.9-.11
T	3/14	**Vitamins: water soluble and fat soluble, their roles in enzyme-catalyzed reaction**	**21.12-.15**
W	3/15	Nucleic acids: introduction to structure, function	22.1-.3
F	3/17	DNA replication	22.4-22.6
11 M	3/20	RNA transcription, processing, translation, gentic code, mutations	22.7-.10
T	3/21	Protein synthesis, ribosomal structure and drugs that affect translation	22.11-.12
W	3/22	Recombinatnt DNA and genetic engineering; PCR reaction	22.13-.16
F	3/24	Metabolism: extracting energy from foods, key molecules	23.1-.6
12 M	3/27	Stages of Metabolism; mitochondrial reactions, TCA cycle, electron transport	23.7-.8
T	3/28	Oxidative phorphorylation, ATP production	23.9-.12
W	3/29	Carbohydrate metabolism: digestion, absorption, glycolysis pathway	24.1-.2
F	3/31	ATP production, fates of pyruvate, anerobic fermentation of alcohol,	24.3-.4
13 M	4/3	Glycogen metabolism; review for exam	
T	4/4	Lipid metabolism: digestion and absorption	25.1-.3
W	4/5	Fatty acid oxidation, ATP yield, ketone bodies & ketosis	25.4-.6
F	4/7	**Third Hour Exam**	**21, 22, 23, 24**
14 M	4/10	Lipogenesis, interdependence of carbohydrate and lipid metabolism	25.7-25.11
T	4/11	Protein Metabolism: digestion and absorption, transamination, deamination	26.1-26.3
W	4/12	Urea cycle; amino acid carbon skeletons as energy sources	26.4-.5
F	4/14	Nitrogen waste, arginine and nitric oxide,	26.6-.10
15 M	4/17	Overview of metabolism: inter-relationships of pathways and equlibrium	
T	4/18	Diet strategies, calorie counting	
W	4/19	Root Review, in-class worksheet and synthesis	
F	4/21	Review for Final Exam	
16 T	4/25	**Final Exam - 11:00-12:50pm *(Tuesday - Lecture Room)***	Comprehensive