

**Biochemistry 705 – Dental Biochemistry**  
 Course Schedule: Spring 2019

Date	Day/Time	Lecture	Chapter	Topic	Instructor
<b>January 2019</b>					
1/7	M 10	1	2	Water, acid, base concepts	Gunther
1/7	M 11	2	2	Buffering physiological pH	Gunther
1/9	W 10	3	3	Amino acid properties	Gunther
1/9	W 11	4	2,3	Amino acid ionization and peptide bond	Gunther
1/11	F 10	FS1	n/a	Local anesthetics and inflammation	Gunther
1/14	M 10	5	3,4	Protein Primary/Secondary structure	Gunther
1/14	M 11	6	4	Protein Tertiary/Quaternary structure	Gunther
1/16	W 10	7	4	Structure and function of collagen	Gunther
1/16	W 11	8	4	Myoglobin and Hemoglobin	Gunther
1/18	F 10	FS2	n/a	Hydroxyapatite structure, Mineralizing micronutrients	Gunther
1/23	W 10	9	4	Hemoglobin, gas transport, buffering	Gunther
1/23	W 11	10	5	Enzyme catalysis and kinetics	Gunther
1/25	F 10	FS3	n/a	Hydroxyapatite solubility, critical pH, electrolyte minerals	Gunther
1/28	M 10	11	6	Mechanisms of enzyme catalysis	Gunther
1/28	M 11	12	6	Enzyme inhibitors	Gunther
1/30	W 10	13	5	Regulation of protein activity	Gunther
1/30	W 11	14	n/a	Blood coagulation 1	Gunther
<b>February 2019</b>					
<b>2/1</b>	<b>F 10</b>	-	-	<b>EXAM 1, Lectures 1-12 + FS1 and FS2</b>	<b>Gunther</b>
2/4	M 10	15	n/a	Blood coagulation 2	Gunther
2/4	M 11	CC1	n/a	Clinical Correlation 1: Hemostasis	Weaver
2/6	W 10	16	8	Carbohydrates and glycoconjugates	Shiemke
2/6	W 11	17	4,8	Therapeutic enzyme inhibitors I	Gunther
2/8	F 10	FS4	n/a	Tooth-protective roles of saliva	Gunther
2/11	M 10	18	9	Lipids and membranes	Shiemke
2/11	M 11	19	9	Membrane transport	Shiemke
2/13	W 10	20	9	Transduction of extracellular signals	Shiemke
2/13	W 11	21	10	Introduction to metabolism and bioenergetics	Shiemke
2/15	F 10	FS5	n/a	Tooth erosion, nutrition	Bagby
2/18	M 10	22	11	Glycolysis	Shiemke
2/18	M 11	23	13	Acetyl Co-A and the TCA Cycle	Shiemke
2/20	W 10	24	14	Oxidative phosphorylation I: electron transport	Shiemke
2/20	W 11	25	14	Oxidative Phosphorylation II: ATP synthesis	Shiemke
<b>2/22</b>	<b>F 10</b>	-	-	<b>EXAM 2, Lectures 13-23 + CC1 + FS3 and FS4</b>	<b>Gunther/Shiemke</b>
2/25	M 10	26	13	Fates of pyruvate and lactic acidosis	Shiemke
2/25	M 11	27	11/13	Reactive Oxygen Species (ROS)	Shiemke
2/27	W 10	28	12	Pentose shunt and glycogen synthesis	Leonardi
2/27	W 11	29	16	Fatty acid and triacylglycerol synthesis	Leonardi
<b>March 2019</b>					
3/1	F 10	FS6	n/a	Cariogenesis	Young
3/4	M 10	30	16	Fatty acid oxidation and ketone body metab.	Leonardi
3/4	M 11	31	12	Glycogen breakdown and gluconeogenesis	Leonardi
3/6	W 10	32	17	Protein turnover and Urea cycle	Leonardi
3/6	W 11	33	17	Amino acid catabolism and products	Leonardi

3/8	F 10	FS7	n/a	Biochemistry of Xerostomia treatments	Gunther/DeBiase
<b>3/11-3/15</b>				<b>SPRING BREAK</b>	
3/18	M 10	34	12/16	Regulation of Fed and Fasting state pathways	Leonardi
3/18	M 11	CC2	-	Clinical correlation 2: Obesity	Leonardi
3/20	W 10	35	11-14,16	Metabolism during exercise	Leonardi
3/20	W 11	36	11,13,14	Metabolism of tumor cells	Leonardi
<b>3/22</b>	<b>F 10</b>	-	-	<b>EXAM 3, Lectures 24-34 + clin corr 2 + FS5 + FS6</b>	<b>Shiemke/Leonardi</b>
3/25	M 10	37	16	Metabolism of membrane lipids	Leonardi
3/25	M 11	38	16	Absorption and transport of fuel lipids	Leonardi
3/27	W 10	CC3	16	Clinical Correlation 3: Diabetes Mellitus	Leonardi
3/27	W 11	CC4	-	Clinical correlation 4: Atherosclerosis	Balla
3/29	F	FS8	n/a	Oral Manifestations of diabetes	Price
<b>April 2019</b>					
4/1	M 10	39	19	Nucleotide metabolism I	Robart
4/1	M 11	40	19	Nucleotide Metabolism II	Robart
4/3	W 10	41	18	Nucleic Acid structure/function I	Robart
4/3	W 11	42	18	Nucleic Acids II	Robart
4/5	F 10	FS 8	n/a	nutrition	Gunther
4/8	M 10	43	20	DNA Replication	Robart
4/8	M 11	44	21	Transcription	Robart
4/10	W 10	45	21	Regulation of gene transcription	Robart
4/10	W 11	46	20	DNA Repair	Robart
<b>4/12</b>	<b>F 10</b>	<b>Exam 4</b>	-	<b>Lectures 35-44 + CC3 + CC4 + FS8</b>	<b>Leonardi/Robart</b>
4/15	M 10	CC5	-	CC 5: HIV progression into AIDS	Gunther
4/15	M 10	CC6	-	Carcinogenesis and oral tumors	Gunther
4/17	W 10	47	21	Therapeutic Enzyme Inhibitors II	Gunther
4/17	W 11	48	18	Post-transcriptional RNA processing	Robart
4/19	F	-	-	Spring holiday, university holiday, no class	
4/22	M 10	49	22	Genetic code and tRNA	Robart
4/22	M 11	50	22	Translation	Robart
4/24	W 10	51	22	Regulation of Translation	Robart
4/24	W 11	52	22	Protein processing and sorting	Robart
4/26	F 10	FS10	-	Oral manifestations of immune deficiency	DeBiase
<b>May 2019</b>					
<b>5/1</b>	<b>W 10</b>	<b>Exam 5</b>	-	<b>Lectures 45-52 + CC5 + CC6 + FS9 + FS10</b>	<b>Robart/Gunther</b>