

# BIOCHEMISTRY WITH A MEDICAL PERSPECTIVE

Online Biochemistry Course, Faculty of Medicine, University of Toronto, Canada

## Course Schedule (SCS-2472-038)

Winter Semester 16 January 2023 to 27 May 2023

Week	Section / Online Quiz	Dates (Week Start)	Video Lecture Topics	Lecturer	Text Chapter	Clinical Insights By Dr. Murray
1 & 2	<b>Biochemistry Basics and Proteins</b>	16 Jan 2023	Course Introduction to Biochemistry Water and pH Amino Acids Protein 3D Structure	Dr. Reithmeier	1 2 3 4 5	Water and pH Balance Vitamin C Deficiency Causes Scurvy
	<b>Quiz 1</b>	<b>30 Jan 2023</b>				
3 & 4		30 Jan 2023	Enzymes Hemoglobin	Dr. Baker	6-8 9	Variations in Km Can Have Physiological Consequences Sickle Cell Anemia
	<b>Quiz 2</b>	<b>13 Feb 2023</b>				
5 & 6		13 Feb 2023	Carbohydrates Lipids Membranes: Structure and Function	Dr. Baker Dr. Reithmeier	10 11 12, 13	Lactose Intolerance Digitalis
	<b>Quiz 3</b>	<b>27 Feb 2023</b>				
7 & 8	<b>Metabolism</b>	27 Feb 2023	Metabolism, Glycolysis Glycogenolysis PDC, TCA, ETC, Ox.Phos/PMF	Dr. Baker	15, 16 24 18 – 21	Exercise Depends on Various Means of Generating ATP Beriberi-A Disease Due to Deficiency Of Thiamine (Vitamin B-1)
	<b>Quiz 4</b>	<b>13 Mar 2023</b>				
9 & 10		13 Mar 2023	Fat Catabolism, Fat Synthesis Insulin Glycogen Synthesis Diabetes GNG	Dr. Baker	27-29 13, 27 25 27 17	Hyperglycemia GSDs
	<b>Quiz 5</b>	<b>27 Mar 2023</b>				

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11 & 12		27 Mar 2023	Cholesterol Lipoproteins Eicosanoids PI Synthesis and Signalling AA Synthesis and Degradation	Dr. Baker   Dr. Reithmeier	29 29 28 29, 13 30, 31	Tay-Sachs Disease Inherited Defects Of The Urea Cycle Cause Hyperammonemia
	Quiz 6	11 Apr 2023	<b>**QUIZ MOVED TO TUESDAY APR 11th</b>			
13 & 14	<b>Nucleic Acids</b>	10 Apr 2023	Nucleic Acid Structure Nucleotide Metabolism DNA Replication DNA Repair	Dr. Kelley Dr. Reithmeier Dr. Kelley	33 32 34 35	Some Genetic Diseases Are Caused by The Expansion of Repeats of Three Nucleotides Cancers Are Caused by Defective Repair of DNA
	Quiz 7	24 Apr 2023				
15 & 16		24 Apr 2023	Transcription Gene Expression, Regulation RNA Processing	Dr. Kelley	36 37 38	Mutations that Affect pre-mRNA and Alternative Splicing Cause Disease
	Quiz 8	08 May 2023				
17 & 18		08 May 2023	Genetic Code, tRNAs and Amino Acids Translation, Translation Regulation Protein Secretion Recombinant Technologies, CRISPR	Dr. Kelley Dr. Wyatt	39 40 40 41	Some Antibiotics and Some Toxins Act by Inhibiting Protein Synthesis Gene Therapy, Transgenic Animals
	MOCK Quiz	Available 22 May 2023				

## Final Examination 2023

### Date

27 May 2023

### Time

3 hrs

### Material Tested

Final exam includes all topics covered throughout the course