

BIOCHEMISTRY WITH A MEDICAL PERSPECTIVE

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

Course Schedule (SCS-2472-045)

Winter Semester 13 January 2025 to 23 May 2025

Week	Section / Online Quiz	Dates (Week Start)	Video Lecture Topics	Lecturer	Text Chapter	Clinical Insights By Dr. Murray
1 & 2	Biochemistry Basics and Proteins	13 Jan 2025	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
	Quiz 1	27 Jan 2025				
3 & 4		27 Jan 2025	Enzymes Hemoglobin	Dr. Baker	6-8 9	Variations in Km Can Have Physiological Consequences Sickle Cell Anemia
	Quiz 2	10 Feb 2025				
5 & 6		10 Feb 2025	Carbohydrates Lipids Membranes: Structure and Function	Dr. Baker Dr. Reithmeier	10 11 12, 13	Lactose Intolerance Digitalis
	Quiz 3	24 Feb 2025				
7 & 8	Metabolism	24 Feb 2025	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)
	Quiz 4	10 Mar 2025				
9 & 10		10 Mar 2025	Fat Catabolism, Fat Synthesis Insulin Glycogen Synthesis Diabetes GNG	Dr. Baker	27-29 13, 27 25 27 17	Hyperglycemia GSDs
	Quiz 5	24 Mar 2025				

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11 & 12		24 Mar 2025	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	07 Apr 2025				
13 & 14	Nucleic Acids	07 Apr 2025	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	21 Apr 2025				
15 & 16		21 Apr 2025	Transcription Gene Expression, Regulation RNA Processing	Dr. Kelley	36 37 38	Mutations that Affect pre-mRNA and Alternative Splicing Cause Disease
	Quiz 8	05 May 2025				
17 & 18		05 May 2024	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 19 May 2025				

Final Examination 2025

Date

23 May 2025

Time

3 hrs

Material Tested

Final exam includes all topics covered throughout the course