



Syllabus - Summer On-line Medical Biochemistry

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COURSE MODULE CONTENT AND OUTLINE:

Learning resources are all on-line, including reading file, a pre-recorded video, a slide file, a study guide, and assessment files. Syllabus is the same for both the prep- and remedial courses.

MODULE I	METABOLIC BIOCHEMISTRY MODULE (28 TOPIC SESSIONS)
5-19-25	Summer Medical Biochemistry: View This Video First (Course Introduction Video), Review Syllabus and Contact me w/ Qs (franklin@tulane.edu).
Block A.	Fundamentals
5-20-25	A1. Biomolecules
5-20-25	A2. Biomembranes
5-21-25	A3. Amino Acids
5-21-25	A4. Protein Structure
5-22-25	A5. Enzymes
5-22-25	A6. Metabolic Design
5-23-25	Study Day A1-A6
Block B.	Carbohydrate Metabolism
5-26-25	B1. Glycolysis
5-26-25	B2. Gluconeogenesis
5-27-25	B3. Glycogen Metabolism
5-27-25	B4. Pentose Phosphate Pathway
5-28-25	B5. Metabolism of Other Sugars
Block C.	Energy Production
5-28-25	C1. Pyruvate Dehydrogenase Complex
5-29-25	C2. Citric Acid Cycle
5-20-25	C3. Oxidative Phosphorylation
5-30-25	Study Day - Review of Blocks A-C

Block D.	Lipid Metabolism
6-2-25	D1. Fatty Acids and Triglycerides
6-3-25	D2. Apolipoproteins and Cholesterol Transport
6-3-25	D3. Cholesterol Biosynthesis
6-4-25	D4. Bile Acid, Steroid Hormones and Vitamin D
6-4-25	D5. Phospholipids, Sphingolipids and Eicosanoids
Block E.	Nitrogen Metabolism
6-5-25	E1. Urea Cycle
6-5-25	E2. Amino Acids I
6-6-25	E3. Amino Acids II
6-6-25	E4. Nucleotide Metabolism
6-9-25	Study Day - Review of Blocks D-E
Block F.	Complex Disease States
6-10-25	F1. Review – Hormonal Regulation of Metabolism
6-10-25	F2. Ethanol Metabolism and Alcoholism
6-11-25	F3. Diabetes
6-11-25	F4. Vitamins
6-12-25	Study Day - Review of Block F
6-13-25 to ** 6-17-25 (plus weekend)	Study Days - Review of Blocks A-F
6-18-25	Metabolic Biochemistry Module Exam
	** If enrolled in only the Cellular Module (Not Taking the Metabolic Module), the start date is June 13th, and includes all Block A - Fundamental topics. Fundamentals topics are covered on these dates: A1/A2 (6-13), A3/A4 (6-16), A5/A6 (6-17), Study day (6-18).
MODULE II	CELLULAR BIOCHEMISTRY MODULE (26 TOPIC SESSIONS)
Block G.	Genomics
6-19-25	G1. Nucleotide Structure
6-19-25	G2. Organization of the Human Chromosome
6-20-25	G3. DNA Replication, Damage & Repair
6-20-25	G4. DNA Analysis and Technology
6-23-25	G5. DNA Recombination
6-23-25	G6. DNA-Binding Proteins and Gene Regulation
6-24-25	G7. Transcription and RNA Processing
6-24-25	G8. Translation and Protein Processing

6-25-25	Study Day - Review of Block G (and Block A if only taking Cellular Module)
Block H.	Protein Trafficking
6-26-25	H1. ER/Golgi/Receptor Mediated Endocytosis
6-26-25	H2. Mitochondrial and Nuclear Transport
6-27-25	H3. Glycobiology
Block I.	Structural Proteins
6-30-25	I1. Microtubules
6-30-25	I2. Cytoskeleton
7-1-25	I3. Collagen
7-1-25	I4. Extracellular Matrix
7-2-25	Study Day
Block J.	Blood
7-3-25	J1. Blood Proteins: Hemoglobin
7-3-25	J2. Sickle Cell Anemia and Thalassemia
7-7-25	J3. Immunoglobulins
Block K.	Signal Transduction
7-7-25	K1. G Protein Coupled Receptors
7-8-25	K2. Single Transmembrane Receptors
7-8-25	K3. Nuclear Receptor Signaling
7-9-25	Study Day
Block L.	Cell Cycle and Cancer
7-10-25	L1. Cell Cycle Regulation
7-10-25	L2. Cancer
7-11-25	L3. Apoptosis I
7-11-25	L4. Apoptosis II
7-14-25 to 7-17-25	Study Days - Review of Blocks G-L (and Block A if only taking Cellular Module)
7-18-25	Cellular Biochemistry Module Exam

Within a week of your completion of the Summer On-line Medical Biochemistry Course, we will send you a link to a survey monkey site and ask your opinions about the course, its organization and content, and how it has helped you in achieving your education goals. We welcome your feedback and input on what we did right, and how this can be improved in for the future.

Thank You.

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