Biochemistry 385 – Metabolic Biochemistry

Module	Topic	Lecture Title (PPT and Lecture Video)	Textbook Readings
1	MO1.T01	*Review of Bioenergetics*	*Section 2.1*
	MO1.T02	*Overview of Metabolism*	*Section 9.1*
	MO1.T03	*Overview of Enzymes*	*Sections 7.1, 7.5*
D2Q-1 and SW-1	MO1.T04	*Plants Harvest Energy from the Sun*	*Section 12.1*
2	MO2.T01	*Energy Conversion by Plant Photosystems*	*Section 12.2*
	MO2.T02	*Photophosphorylation*	*Section 12.3*
	MO2.T03	*The Calvin-Benson Cycle*	*Section 12.4*
D2Q-2 and SW-2	MO2.T04	*C4/CAM Pathways Reduce Photorespiration*	*Section 12.4*
3	MO3.T01	*Overview of Carbohydrate Structure and Function*	*Section 13.1*
	MO3.T02	*Biological Functions of Glycoconjugates*	*Section 13.2*
	MO3.T03	*The Pentose Phosphate Pathway*	*Section 14.1*
D2Q-3 and SW-3	MO3.T04	*The Gluconeogenic Pathway*	*Section 14.2*
		EXAM 1 Topics covered in Modules 1-3	
4	MO4.T01	*Overview of Glycogen Metabolism*	*Section 14.3*
	MO4.T02	*Regulation of Glycogen Metabolism*	*Section 14.3*
	MO4.T03	*Structure and Function of Fatty Acids*	*Section 15.1*
D2Q-4 and SW-4	MO4.T04	*Triacylglycerols are Energy Storage Lipids*	*Section 15.2*
5	MO5.T01	*Cell Membranes Contain Three Major Lipids*	*Section 15.3*
	MO5.T02	*Lipids Function in Cell Signaling*	*Section 15.4*
	MO5.T03	*Fatty Acid Oxidation: Palmitate*	*Section 16.1*
D2Q-5 and SW-5	MO5.T04	*Other Fatty Acid Oxidation and Ketogenesis*	*Section 16.1*
6	MO6.T01	*Synthesis of Fatty Acids*	*Section 16.2*
	MO6.T02	*Synthesis of Triacylglycerols & Membrane Lipids*	*Section 16.2*
	MO6.T03	*Cholesterol Synthesis and Metabolism*	*Section 16.3*

Module	Topic	Lecture Title (PPT and Lecture Video)	Textbook Readings
D2Q-6 and SW-6	MO6.T04	*Nitrogen Fixation and Assimilation*	*Section 17.1*
		EXAM 2 Topics covered in Modules 4-6	
7	MO7.T01	*Protein Turnover*	*Section 17.2*
	MO7.T02	*Amino Acid Degradation*	*Section 17.2*
	MO7.T03	*Amino Acid Biosynthesis*	*Section 17.3*
D2Q-7 and SW-7	MO7.T04	*Synthesis of Amino Acid Derivatives*	*Section 17.4*
8	MO8.T01	*Purine Metabolism*	*Sections 18.1, 18.2*
	MO8.T02	*Pyrimidine Metabolism*	*Section 18.3*
D2Q-8 and SW-8	MO8.T03	*Deoxynucleotide Metabolism*	*Section 18.4*
9	MO9.T01	*Metabolic Integration*	*Section 19.1*
	MO9.T02	*Metabolic Energy Balance*	*Section 19.2*
D2Q-9 and SW-9	MO9.T03	*Biochemistry of Nutrition and Exercise*	*Section 19.3*
		EXAM 3 Topics covered in Modules 7-9	
10	MO10.T01	*Overview of DNA Replication*	*Section 20.1*
	MO10.T02	*Biochemistry of DNA Synthesis*	*Section 20.1*
	MO10.T03	*Mechanisms of DNA Repair*	*Section 20.2*
	MO10.T04	*Mechanisms of DNA Recombination*	*Section 20.3*
D2Q-10 and SW-10	MO10.T05	*Structure and Function of RNA*	*Section 21.1*
11	MO11.T01	*Biochemistry of RNA Synthesis*	*Section 21.2*
	MO11.T02	*RNA Processing*	*Section 21.3*
	MO11.T03	*Regulation of Eukaryotic RNA Processing*	*Section 21.4*
	MO11.T04	*Deciphering the Genetic Code*	*Section 22.1*
D2Q-11 and SW-11	MO11.T05	*Biochemistry of Protein Synthesis*	*Section 22.2*

Module	Topic	Lecture Title (PPT and Lecture Video)	Textbook Readings
12	MO12.T01	*Post-translational Modification of Proteins*	*Section 22.3*
	MO12.T02	*Mechanisms of Prokaryotic Gene Regulation*	*Sections 23.1, 23.2*
D2Q-12 and SW-12	MO12.T03	*Mechanisms of Eukaryotic Gene Regulation*	*Section 23.3*
		EXAM 4 Topics covered in Modules 10-12	
		FINAL EXAM: Based on a Set of 250 Questions *(Final Exam Question Set in the D2L Quiz tab)*	