

## CHEM4402 E2 Study List

CH	Topic
17	Triacylglycerol: physical & chemical characteristics
17	Triacylglycerol: advantages & disadvantages as energy source
17	Lipid Digestion
17	Absorption, packaging & export of lipids & lipoproteins
17	mobilization of stored lipids: hormonal control & transport
17	Intracellular fatty acid catabolism: formation of fatty acyl-CoA
17	Intracellular fatty acid catabolism: transport into the mitochondria
17	Intracellular fatty acid catabolism: $\beta$ -oxidation sequence & purpose
17	biochemical accounting: ATP yields from fatty acids, glucose, NADH, FADH <sub>2</sub>
17	Variations on fatty acid (FA) oxidation: unsaturated FA's
17	Variations on fatty acid (FA) oxidation: odd-numbered FA's
17	Variations on fatty acid (FA) oxidation: $\omega$ -oxidation
17	Regulation of FA oxidation: key steps & signals
17	Ketone bodies: compounds, precursors, when & why synthesized, function, disadvantages
18	protein digestion
18	amino acid catabolism: transamination
18	amino acid catabolism: roles of $\alpha$ -ketoglutarate, Glu, pyruvate, Ala, Gln
18	amino acid catabolism: aminotransferases and glutamate dehydrogenase
18	Urea cycle: formation of carbamoyl phosphate
18	Urea cycle: reactions, intermediates, products
18	Urea cycle: regulation (short & long term), signals
18	Urea cycle: relationship to citric acid cycle
18	amino acid catabolism: carbon skeleton products
18	amino acid catabolism: glucogenic vs. ketogenic amino acids
18	Vitamin chemistry: A, B series, C, D, E, K, S-adenosylmethionine
19	Mitochondrial structure and function
19	NAD, FAD, Q, cytochromes, Fe-S proteins: properties and functions
19	electron transport chain: complex I functions
19	electron transport chain: complex II functions
19	electron transport chain: complex III functions
19	electron transport chain: complex IV functions
19	electron transport chain: fate of e <sup>-</sup> 's donated by NADH, FADH <sub>2</sub>
19	free energy change associated with electron transport
19	electron transport, H <sup>+</sup> pumping and electrochemical gradients
19	ATP synthesis: chemiosmotic model
19	ATP synthesis: ATP synthase (structure, function, action)
19	biochemical accounting: H <sup>+</sup> pumped per ATP synthesized
19	electrochemical gradients & ADP, ATP, Pi transport
19	malate-aspartate shuttle
19	regulation of oxidative phosphorylation
19	Photophosphorylation: electron sources (donors) and final acceptors
19	chloroplast structure and function
19	light absorbing pigments: chlorophyll, carotenoids, phycobilin
19	Plant photosystem II: structure, function & action
19	Plant photosystem I: structure, function & action
19	water splitting complex: Mn, function and action
19	ATP synthesis in photophosphorylation
19	biochemical accounting: ATP synthesis in photophosphorylation