

CHEM4401 E3 Study List

CH	Topic	
7	Overview of biological roles for carbohydrate	
7	Size classes of carbohydrates	
7	Monosaccharides:polyhydroxy aldehydes & ketones	
7	Monosaccharides:aldoses vs ketoses	
7	Monosaccharides:stereochemistry	
7	Monosaccharides:numbering of carbons	
7	Monosaccharides:pyranoses, furanoses, pentoses, hexoses	
7	Monosaccharides:anomeric carbon configurations	
7	Monosaccharides:chemical modifications	
7	glycosidic bonds:formation and nomenclature	
7	oligosaccharides:common sugars	
7	polysaccharides: Hetero- vs Homopolysaccharides	
7	polysaccharides:Starch, Glycogen, Cellulose & Chitin	
7	polysaccharides:Glycosaminoglycans	
7	Glycoconjugates:Proteoglycans	
7	Glycoconjugates:Glycoproteins	
7	Glycoconjugates:glycolipids & lipopolysaccharides	
7	Lectins	
8	Overview of biological roles for nucleotides & nucleic acids	
8	Nucleotide structure:purines & pyrimidines	
8	Nucleotide structure:pentose sugar	
8	Nucleotide structure:phosphate	
8	Nucleic Acid polymers:phosphodiester bond	
8	Nucleic acid polymers: primary structure	
8	Nucleic acid polymers:forces that contribute to 3D structure	
8	Nucleic acid polymers:base pairing	
8	Nucleic acid polymers:Watson-Crick model	
8	Nucleic acid polymers:alternative 3D structures/functions	
8	Nucleic acids:bends, hairpins, cruciforms & multistranded structures	
8	Nucleic acid chemistry:non-covalent bond modifications	
8	Nucleic acid chemistry:covalent modifications	
8	Nucleic acid chemistry:DNA repair	
10	Overview of biological roles for lipids	
10	Energy lipids:Fatty acid structure, characteristics & nomenclature	
10	Energy lipids:Triacylglycerol structure, characteristics & nomenclature	
10	Wax structure, characteristics & functions	
10	Structural lipids:glycerophospholipids	
10	Structural lipids:ether lipids	
10	Structural lipids:galactolipids/sulfolipids	
10	Structural lipids:sphingolipids (sphingomyelin, cerebrosides, globosides, gangliosides)	
10	Structural lipids:sterol structure, characteristics & function	
10	Additional lipid roles:phosphatidylinositol & eicosanoids	
10	Additional lipid roles:steroid hormones	
10	Additional lipid roles:Vitamins D, A, E and K	
10	Additional lipid roles:warfarin, ubiquinone and dolichol	