

CHEMISTRY 312: The Chemistry of Life

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Prerequisites: none

Textbook: *"Organic & Biochemistry for Today"*, 5th Ed., S. L. Seager and M. R. Slabaugh, Thomson (Brooks/Cole Publishing), 2004.

Chapter Title [Number of Lectures]

- 1 Organic Compounds: Alkanes (An Introduction to Organic Chemistry the Foundation of Biochemistry) Atoms: small building blocks, The Periodic Table: the ultimate in organization, Chemical Bonds: (Ionic, Covalent, & Hydrogen Bonds) the ultimate glue [2]
- 2 Unsaturated Hydrocarbons: (Functional groups, Hydrocarbons: Alkenes, Alkynes, and Aromatic Hydrocarbons, Nomenclature, & Stereochemistry) [1]
- 3 Alcohols, Phenols, Ethers, Thiols & Disulfides (Vitamins A & E, glutathione - antioxidants) [2]
- 4 Aldehydes & Ketones (Biological oxidation : reduction) [2]
- 5 Carboxylic Acids, Esters (Compounds that range from stench to sweet smelling. Chemical Opposites: the mobile proton or hydrogen ion & pH) [2.5]
- 6 Amines and Amides (Compounds that are fishy stuff. Brain and CNS Chemistry) [2.5]
- 7 Carbohydrates (Sugar, Starch, & Cellulose: How sweet it is. Would it be wood?) [3]
- 8 Lipids (A potpourri of fats: chubb and greasy kid stuff) [3]
- 9 Proteins (Polypeptides: Collagen, Silk, Hair, Blood, and Messenger Chemistry) [3]
- 10 Enzymes (Fast and Efficient Chemistry, Photosynthesis, & Vision: Shine a little light on it and look-see Chemistry) [2]
- 11 Nucleic Acids and Protein Synthesis (The molecular basis of Heredity and Protein Synthesis: Reproduction vs Cloning) [3]
- 12 Nutrition and Digestion (The Basis of Healthy Living : Read the label: USRDA diet - Fat, Carbohydrate, Protein, Vitamins, & Minerals: Let's eat right out there.) [4]

There will be weekly quizzes (10 points each) beginning the second week.

NO MAKE-UP QUIZZES OR EXAMS

the board except "commercials." You should purchase a copy of the lecture notes from the bookstore.

2. Recopy your lecture notes into a bound spiral notebook with your name on the cover in ink. Concentrate on functional groups, structures, nomenclature, definitions, concepts and functions that are covered in the lecture notes. This notebook is to be turned in at the final examination (10 points). This notebook will not be returned. There will be no exceptions.
3. Use your lecture notes as a guide to your reading in the textbook.
4. Do the homework problems neatly in the bound spiral notebook with your name on the cover in ink. Some of the answers are in the back of the textbook. This notebook is to be turned in at the final examination (10 points). This notebook will not be returned. There will be no exceptions. One of the best ways of learning is to find a study partner or to form a study group and work on the problems together. Doing the homework problems is how you develop the analytical/critical thinking skills to do well on the quizzes and final exam.

NO MAKE UP QUIZZES OR EXAMS

Students who miss any quiz or examination will be given 48 hours to contact me otherwise they will be assigned a grade of zero (F) on that quiz or exam.

12 Quizzes @ 10 points / quiz (120 points)

Homework (10 points) To be turned at the Final Exam.

Lecture Notes (10 points) To be turned at the Final Exam.

Semester Project (10 points) To be turned in on the last day of class.

Final exam (50 points)

Total (200 points)

The University Writing Requirement will be satisfied by a combination of quizzes, homework problems and the Semester Project.