

COURSE OBJECTIVES FOR BIOLOGY 1081 ARE TO LEARN AND BE ABLE TO APPLY:

This course is designed for students whose program requires a majors' level course in biology. This course introduces the fundamental characteristics of life, from the molecular to the cellular level, with an emphasis on structure-function relationships and placed in an evolutionary context. Topics covered include: chemicals of life, cell biology, bioenergetics, cell cycle, genetics, DNA replication, protein synthesis, and gene regulation. We'll learn biological terms related to these concepts with their derivation from the Latin and Greek, the ecological ways in which these principles affect our daily lives, and how we may more effectively live in this biological world.

REQUIRED TEXT: Please bring Campbell's Biology to class every day. (I also post my lecture notes on-line.)
 Reece et al., *Campbell's Biology*, 10th Edition, Benjamin Cummings (2014)
FASTEN THIS LECTURE SCHEDULE INSIDE THE FRONT COVER OF YOUR TEXT BOOK FOR EASY REFERENCE.

22-Aug	Introduction to Sci. Major's Course: Wordstems, Newsnotes, Study Groups Syllabus Test structure, Grading system.	24-Aug	How do you know it is alive? Early History of Biology	26-Aug	Theory: Matter is made of atoms Structure and Function of atoms
29-Aug	Water , the medium of life: that surprising and wonderful solvent	31-Aug	Chemistry of Carbon : Life's organizer. Organic Chemistry	2-Sep	FIRST TEST
44-55	Water ionizes: Acids, Bases, & pH	56-64	Covalent Bonds, functional groups	SGR	
5-Sep	LABOR DAY!	7-Sep	Tests returned and discussed Intro to Sugars?	9-Sep	Macromolecules I: Carbohydrates What they are & how they behave
12-Sep	Macromolecules II: Lipids Organic hydrocarbons 72-75 PRACTICE NEWSNOTE	14-Sep	Phosphodiglycerides, Membranes, Emulsions, Cholesterol and Soap 74-75	16-Sep	Macromolecules III: Proteins : polymers of amino acids
19-Sep	Protein 2: Protein structure and function 78-84 Enzymes	21-Sep	Why do you need dietary protein? Protein Complementation handout Lappé Chapter 4: 172-182	23-Sep	SECOND TEST
26-Sep	Tests returned and discussed	28-Sep	10/6 Cell Theory : "the cell is unit of life" The Origins of Life 92-102	30-Sep	
3-Oct	Membranes : Structure, Function & Osmosis 124-139	5-Oct	Energy in Cells: Metabolism Adenosine Triphosphate 141-161	7-Oct	Harvesting Energy I: Glycolysis & Fermentation 162-179
10-Oct	Harvesting Energy II: Respiration & the Krebs Cycle 169-183	12-Oct	Plants: Why do they need light? What IS light, wavelength, fluorescence 185-199 The Light Reactions	14-Oct	READING DAY...
17-Oct	THIRD TEST	19-Oct	Tests returned and discussed	21-Oct	Photosynthesis II: Dark reactions (Intro: mitosis?) 199-208 NEWSNOTE DUE
24-Oct		The Cell Cycle 232-249 Mitosis : exact duplicate cells 252-266	26-Oct	Alternation of Generations Meiosis : Four unique haploid cells 252-265	28-Oct
31-Oct	Inheritance of Traits and the two Laws of Probability 275-280	2-Nov	Independent Assortment 279-291	4-Nov	Sex Linkage: color blindness, calico cats Linked genes are on same chromosome. 292-304 Homework, Set 1 due
7-Nov	NEWSNOTES DISCUSSED	9-Nov	FOURTH TEST	11-Nov	ARMISTICE DAY
14-Nov	Tests returned and discussed NEWSNOTE DUE	16-Nov		Human genetics: traits you may carry blood type, color blindness, etc handout 282-290	18-Nov
21-Nov	DNA: structure & function 85-89 Replication and transcription 318-330 Homework, Set 2 due	23-Nov	Translation 333-354 Mutations, mutagenesis 354-373	25-Nov	THANKSGIVING!
28-Nov	NEWSNOTES DISCUSSED	30-Nov	FIFTH TEST	2-Dec	Tests returned and discussed
10-Aug-16		SGR		9-Dec	FINAL EXAM, 1:30 to 3:30... Arrive prior to 1:30 to be ready for Point and Name!