

Chemistry 208 - WWW
Biochemistry for the Health Sciences
Spring Semester 2005

Instructor: Duane Smith, Jr., Ph.D.

Course section: CHEM 208 - WWW

Office: Beauregard Hall, Room 118

Office Hours: MWF 7:30 – 10:30 am

MW 1:00 – 4:00 pm

(or as arranged with the instructor)

Phone: (985) 448-4165

Email: duane.smith@nicholls.edu

MEETING TIME AND PLACE: Students in this course work independently, but must meet certain deadlines for submission of assignments. For Exams, the student has two options: (1) come to Nicholls campus on the prescribed date and take the test, or (2) if the student is attending another school, arrangements can be made to have the test sent to a school official who will then administer the test under appropriate conditions. In the latter case, you will need to fill out and submit an EXAM ADMINISTRATOR INFORMATION FORM for each test; duplicate sufficient copies of this form (attached).

CATALOG DESCRIPTION. CHEM 208. Biochemistry for the Health Sciences. 3-3-0.
Prerequisite: CHEM 101. Emphasis is on practical aspects of biochemistry necessary for the comprehension of biological processes occurring within the human body. A course designed for students in various health-related programs - nursing, dietetics, etc. Degree credit will not be given for both CHEM 208 and CHEM 435. This course is also available via Internet. Basic computer knowledge is required for students enrolled in the Internet section. (40.0599)

PRE-REQUISITE: CHEM 101

REQUIRED TEXT: Organic and Biological Chemistry, 3rd ed., by H. Stephen Stoker. This text is the same textbook used in the regular on-campus section.

RECOMMENDED: Student website accessible through <http://college.hmco.com/chemistry>. Username and password to be provided by the instructor. This dedicated website, available free of charge, offers a wealth of resources to help students, including:

- Chapter overviews
- Self-quizzing using Houghton Mifflin's ACE system
- Glossary terms, key reactions, and key concepts in flashcard format
- Additional Chemical Connections with links to related sites
- Additional real-life applications with relevant links
- Career preparation information.

A course website is set up at the Nicholls Blackboard™ server: <http://www.nicholls.edu:1280>

At this website, you will find a copy of this syllabus, the course calendar, a discussion forum, Internet resources, online quizzes, and a virtual classroom – a tool that will allow you to interact in real time, online, with classmates and your instructor.

As a student attending Nicholls, you have access to several computer labs on campus (Cenac, WAC, LS&T) through a dial-in account, and at the library or through the Department's computer labs (BEA 129 and 245). You will need to fill out and submit a "User Agreement Form" as soon as possible. A variety of self-help programs are available in BEA 129 and 245.

HARDWARE AND SOFTWARE REQUIREMENTS: Standard requirements for Internet-based courses at Nicholls can be found in this syllabus (attached) or on the web at <http://www.Nicholls.edu/distance/requirements.htm>. *Registration in this course is by permission of instructor only. Only students who can demonstrate, to the instructor's satisfaction, that they are able to communicate with the instructor via e-mail **and** the virtual classroom to be enrolled in this class.*

COURSE GOAL: The goal of this class is to help the student become familiar and comfortable with the concepts, terms, and processes of organic chemistry. Fundamental aspects of organic compounds and biological molecules and their reactivity will be explored. The student will be able to name and identify basic molecules, recognize reactions and write equations.

STUDENT OUTCOME OBJECTIVES: Upon completion, the student will be able to:

1. Identify and name organic and biological molecules
2. Draw organic and biological molecules or deduce their structure from the name
3. Understand the structural features of organic functional groups
4. Discuss the metabolism of carbohydrates, lipids, and protein molecules
5. Analyze the kinetic principles associated with the enzymatic process
6. Classify and characterize carbohydrates and their importance in metabolism
7. Identify amino acids and understand their importance in protein metabolism
8. Understand and explain the chemical bonding concepts of organic molecules
9. Understand the effects of chirality of molecules on metabolism
10. Recognize and identify the various levels of protein structure and function
11. Discuss the production and metabolism of ATP

COURSE CONTENT:

1. Structure and classification of simple organic molecules
2. Structure and classification of biologically-important organic macromolecules
 - a. Carbohydrates
 - b. Lipids
 - c. Proteins
 - d. Nucleic Acids
3. Biochemical energy production
4. Basic metabolic pathways in
 - a. Glycolysis
 - b. Citric Acid Cycle
 - c. Oxidative Phosphorylation
 - d. Lipid Metabolism
 - e. Protein Metabolism

COURSE REQUIREMENTS:

1. Required written work:
 - a. Homework assignments – online
 - b. Quizzes - online
 - c. Exams
2. Activities
 - a. Cooperative group discussions – via virtual classroom

ONLINE QUIZZES: Online quizzes will be administered through Blackboard™. You can retake these quizzes, which are randomly varied, as often as you want (on or before the deadline) until you obtain an acceptable score. Deadlines are typically set about two weeks apart.

METHOD OF EVALUATION:

Grades will be based on a 10-point grading scale.

90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
< 60	F

Grades will be based on the average of four exams and one comprehensive final. Students may drop the lowest exam score excluding the final exam. Everyone must take the final exam even if you are currently getting an A in the course. The final average exam score constitutes 50% of the final grade. Several topic area quizzes will be given throughout the semester. These quizzes may be repeated to enhance knowledge of a particular subject. These quizzes are randomized, and only the final score will be recorded. The average final quiz grade will account for 35-40% of the final grade. Online cooperative group discussions may be given throughout the semester and may account for 5% of the final grade. **Homework assignments will be made throughout the semester and will account for 10% of the total grade value.** This grading policy may be amended due to any unforeseen changes in schedule.

MAKE-UP POLICY: Make-up will be dealt with on a case-by-case basis.

ATTENDANCE POLICY: Students work independently in this course. However, students are strongly encouraged to consult with the instructor via e-mail, telephone, or through virtual classroom at least once a week.

ACADEMIC HONESTY POLICY: Any student found cheating will be subject to the penalties as stated in the Student Code of Conduct Handbook; including, but not limited to, a score of zero on an exam, expulsion from the class, and/or expulsion from the University.

SEMESTER WITHDRAWALS:

The responsibility for withdrawing from the course, if you decide not to continue, lie completely with the student. Failure to drop a course by the final deadline will result in your receiving a grade of “F”. **The last day to drop the course with a “W” is Thursday, April 7, 2005.**

DISABILITIES POLICY: If you have a documented disability that requires assistance, you will need to register with the Office of Disability Services for coordination of your academic accommodations. The Office of Disability Services is located in Peltier Hall, Room 100-A. The phone number is (985) 448-4430 (TDD 449-7002).

THIS SYLLABUS, IN NO WAY, IS TO BE MISCONSTRUED AS A CONTRACT, AND MAY BE AMENDED BY THE INSTRUCTOR AS DEEMED NECESSARY.

OUTLINE OF TOPICS

<u>CHAPTER(S)</u>		<u>POINTS</u>
1	Saturated Hydrocarbons	
2	Unsaturated Hydrocarbons	
3	Alcohols, Phenols, Ethers, and Thiols	
4	Aldehydes and Ketones	
5	Carboxylic Acids and Esters	
6	Amines and Amides	
	*EXAM 1 (Tentatively Thurs., Feb. 10, 2005)	
		100
7	Carbohydrates	
8	Lipids	
9	Proteins	
	*EXAM 2 (Tentatively Tues., Mar. 8, 2005)	
		100
10	Enzymes, Vitamins, and Minerals	
11	Nucleic Acids	
12	Biochemical Energy Production	
	*EXAM 3 (Tentatively Tues., Apr. 5, 2005)	
		100
LAST DAY TO DROP WITH 'W' GRADE IS THURSDAY, APRIL 7, 2005		
13	Carbohydrate Metabolism	
14	Lipid Metabolism	
15	Protein Metabolism	
	*EXAM 4 (Tentatively Thurs. Apr. 28, 2005)	
		100
	FINAL EXAM (as per published schedule)	<u>100</u>
	TOTAL POINTS	500**

Notes: * Exam dates are tentatively set around the classroom exam dates. Considering the nature of an online class, these dates need to be somewhat flexible to meet everyone's diverse schedule. However, a consensus will be reached as to which date/time is the most appropriate for everyone to take the exam together.

** Students may drop the lowest exam score excluding the final exam. Everyone MUST take the final regardless if the student is currently making an A in the course. The final average exam score will account for 50% of the final grade. Online quizzes will account for 35-40% of the final grade. Students may take the quizzes multiple times to reinforce learning of a particular subject; however, only the final score will be recorded. Online discussion groups may be formed to discuss certain topic areas, and participation could amount to 5% of the final grade. Homework will account for 10% of the final grade.