University of Wisconsin-Eau Claire Chem 150: Sections 001 - Fall 2015 Survey of Biochemistry Course Syllabus

Chem 150 is targeted at non-science majors, and in particular, those students interested in applying for admission to Nursing Program at UW-Eau Claire. The prerequisite for Chem 150 is a one-semester course in general chemistry (Chem 103 at UW-Eau Claire). In that course you should have learned about the elements that make up the periodic table and how they combine and interact to produce the matter that makes up the universe, including ourselves. In this course we will focus our attention on the upper right-hand corner of the periodic table to look at the non-metals, and in particular, the chemistry of the element carbon. Carbon atoms can combine with one another and other non-metal atoms to produce many different types of molecules, more molecules than those produced by all the other elements on the periodic table combined! The carbon-based molecules are referred to as **organ**ic molecules, so called because most are derived from compounds that are made by living **organ**isms. In this course we will be integrating the topics of general, organic and biological chemistry. We will move back and forth through these three areas of chemistry with the intention of not only developing a working knowledge of biochemistry, but also to establish a firm foundations on which to build this knowledge. To help us on this journey, we will focus on the following outcomes:

- Applying what you learned in general chemistry to the development of an understanding that can be used to recognize, classify, and name, organic molecules, and to predict their behaviors.
- Applying the insights gained about organic molecules, and in particular, functional group chemistry, to predict the chemical and physical properties and behaviors of biological molecules.
- And from this, developing an appreciation and basic understanding for how biological systems work at the molecular level, with particular emphasis on how this applies to the health sciences.

Successful completion of Chem 150 will contribute specifically to two of the five liberal education learning goals for a baccalaureate degree from UW-Eau Claire:

- A knowledge of the natural world.
- Creative and critical thinking.

This semester there will be a significant online component to the course, worth approximately 30% of your grade. This will comprise online homework assignments, which will be graded. You will benefit most from these assignments if they are completed by the time we cover the material in class. For that reason they will due on the last day we cover a particular unit of material in class. There will, however, be a one week grace period to complete the assignments for a grade.

Lecture:	Sect. 001	3:30 - 4:45 pm,	Mon. & Wed		Centennial 1204	
Instructor:	Warren Gallagher	Phillips 437	(715) 836-5	388 <u>w</u>	gallagh@uwec.edu	
Course Materia	als:					
Textbook	<i>General, Organic and Biochemistry: An Applied Approach, 2nd ed., James Armstrong, 2015. This textbook is available from the the UW-Eau Claire Book Store.</i>					
Course Website	We will be using <i>Desire2Learn</i> as our course management system. From the <u>UW-Eau Claire Current Students page</u> , select D2L from the links located along the right-hand side of the page. The site will become available to you on Wednesday, 2. September, 2015.					
OWLv2	This semester, we will be making use OWLv2, which is the companion online homework site for the textbook we are using. If you have not done so already, you will need to purchase an access code for the online site at the service desk in the bookstore. You can register for the OWLv2 component of our course by using the link in the navigation bar of the <i>D2L</i> site. <i>Please use your uwec.edu email address</i> to create your login. If you have not purchased an access code yet, you can still create a login and use the OWLv2 site for two weeks on a trial basis. The OWLv2 site will be used to administer the weekly homework assignments. These assignments are of two types, <i>Mastery Assignments</i> , intended to augment your understanding of the material being covered in class, and <i>Problem Assignments</i> , which are similar to the problems sets found in the text. There will be one assignment each for each of the thirteen units that we will cover this semester. The <i>Mastery Assignments</i> are worth up to 4 points each while the <i>Problem Assignments</i> are worth 10 points each. You should complete the assignments for a unit by the time we finish covering that unit in class, however, you will be given a one week grace period after that to complete the assignments for the grade.					
i>Clicker	We will be using the i>Clicker response system this semester. The clickers will be used to respond to questions during our face-to-face meetings. This semester we will be experimenting with a version of i>Clicker called REEF, which does two things. It allows you to review, online, the questions that were asked in class. It will also allow you to use a smartphone instead of an i>Clicker, to answer questions in class. There is a \$10 fee to obtain a 6-month code to activate theses two features, however, there is a possibility that we will be able to provide you with codes this semester for free, so please wait until our meeting on 9. September, when we should know all the options.					
Grading:	3 in-class exams at 100 p	points each		300	52%	
	Online homework assign	iments		175	30%	
	Final Exam (comprehens	sive)		100	17%	
• Whole the sem	letter grades will be assignester on a percentage basi	ned at the end of is:	Total 90 - 100% 80 - 89% 70 - 79% 60 - 69% < 60%	575 A B C D F	100%	

- +/- grades may be assigned at the end of the semester to students coming in just below one of the cutoffs for the whole letter grades. These will be based on more subjective criteria that includes participation in class and overall perceived effort put into the class.
- Graded Items:
 - Exams: There will be three in-class exams along with a final exam that is comprehensive, each worth 100 points. The dates for the in-class exams are shown on the class schedule
 - Homework Assignments: There will be a total of 13 each of the Mastery and Problem Assignments. The Mastery Assignments are worth up to 4 points each, while the Homework Assignments are worth 10 points each. The due dates for these can be found on the OWLv2 site. Also, the deadline for receiving grades fro the assignments are marked on the course *D2L* calendar.
 - We will be using clickers during our in-class meetings this semester. Given the large size of the class, they should provide an opportunity for a greater number of students to participate in classroom discussions. For most lectures, there will be a handful of questions for you to respond to with the clickers. This will help both of us to better gauge your understanding of the material. Your responses to questions will be recorded. The purpose behind the clickers is primarily to get you to think and respond to questions. You will be awarded 80% for participation and an additional 20% for answering a question correctly. Your participation will also be used to monitor your attendance. The clicker responses will be used to award up to 2 bonus points to your final semester grade. Therefore, you should plan to bring your clickers to every class. I will start keeping track of your clicker responses after the first week to give everyone an opportunity to obtain and register their clicker I will be dropping your 5 lowest response days to allow for an occasional forgotten clicker, dead batteries, excused absences, etc.

Supplemental Instruction (SI):

An (SI) component is being provided this semester for all who want to improve their understanding of the material taught in this course. The SI sessions will be led by Patrick Moran, who has already mastered the course material and has been trained to facilitate group sessions where students can meet to compare class notes, review and discuss important concepts, develop appropriate strategies for studying, and prepare for exams. Attendance is free and voluntary. Students may attend as many times as they choose. There will be three (3) available SI sessions offered per week. Once they are determined, session days and times will be posted on the class *D2L* site, the lab, and online at www.uwec.edu/asc. Your are encouraged to take advantage of this opportunity!

Attendance Policy:

Attendance will monitored. Excessive absences will be reported to the Office of the Dean of Students and will be considered when determining your course grade. Please email me (wgallagh@uwec.edu) or leave a message on my answering machine (836-5388) if you plan to have any extended absences. In the event of an absence, you are responsible for all materials covered, and for all announcements and assignments made.

Students with Disabilities:

Any student who has a disability that requires classroom accommodations should contact both the instructor and the Services for Students with Disabilities Office, located in Centennial 2106 (836-5800), at the beginning of the semester.

Academic Integrity:

It is important to realize that the official university policy on academic integrity will be strictly followed in this class: "Any academic misconduct in this course is a serious offense, and the strongest possible academic penalties for such behavior will be pursued. The disciplinary procedures and penalties for academic misconduct are described in the UW-Eau Claire Student Services and Standards Handbook (http://www.uwec.edu/DOS/policies/upload/BlugoldCode.pdf) in the section titled: Chapter UWS 14 – Student Academic Misconduct." Actions that will be considered as academic misconduct in this class include:

- Seeking to claim credit for the work or efforts of another without authorization or citation;
- Using unauthorized material or fabricated data in any academic exercise;
- Forging or falsifying academic documents or records;
- Intentionally impeding or damaging the academic work of others;
- Engaging in conduct aimed at making false representation of a student's academic performance;
- Assisting other students in any of the acts listed above.

Chem 150: Survey of Biochemistry, Fall 2015 Section 001, 3:30 – 4:45 pm Mondays & Wednesdays

Tentative Course Schedule

Date		Topics	Chapter	
М	W		Readings	
SEPTE	SEPTEMBER			
	2	Unit 1 - Review of Molecular Structures	3-1,2,3,8,9	
	9			
14	16	Unit 2 - Physical Properties I: Molecular Interactions	4-1,2,5,6 & 5-3,5,6	
21		Unit 3: Chemical Properties I: Chemical Reactions	6-4,5,6,7	
	23	Unit 4 Chamical Properties II: Acids & Pases	7	
28		Unit 4 - Chemical Flopentes II. Acids & Bases		
	30	Exam I	Units 1-4	
Осто	OBER	Unit 5: Organia Chamiatry I: Hydrogenhang	9	
5	7	Unit 5. Organie Chemistry 1. Hydrocarbons		
12	14	Unit 6 - Organic Chemistry II: Alcohols	10	
19	21	Unit 7 - Organic Chemistry III: Carbonyls, Aldehydes & Ketones	11	
26	28	Unit 8: Organic Molecules III: Carboxylic Acids & Amines	12	
NOVEMBER		12		
2		Unit 9 - Chemical Properties II: Condensation & Hydrolysis Reactions	15	
	4	Exam II	Units 5-8	
9		Unit 9 - Chemical Properties II: Condensation & Hydrolysis Reactions, con'd	13	
	11	Unit 10 Dischomistry I: Drotains	14	
16		Unit 10 - Diochemistry I. 1 Iotenis		
	18	Unit 11 Dischamistry II. Cock shudretes	15	
23		Unit 11 - Biochemistry II: Carbonydrates		
	25	Unit 12 Dischamistry III, Linida & Marshamar	16	
30		Unit 12 - Biochemistry III. Lipids & Memoranes		
DECEMBER		Every III	Unite 0.12	
	2	Exam III	Units 9-12	
7	9	Unit 13 - Biochemistry IV: Nucleic Acids & Protein Synthesis	17	
TI	TBA Final Exam		Units 1-13	

*April 10 is the last day that you can withdraw from the class with a "W" on your transcript.