

CH 121: General, Organic and Bio Chemistry Fall Syllabus 2007

INTRODUCTION:

Your text for this class is outstanding. However, don't just read it; you need to interact with it. Have a pencil and paper with you whenever you open your book. Take notes; write down questions, and always work the Sample Problems. Also work many of the "Questions and Problems" as they come up in the text. (Answers to even number question/problems are at the end of each chapter.) If you have problems with the questions or the material, bring it up in class. Your classmates will benefit from your questions.

Stay ahead of the lecture. You will note that I won't cover the material in the same fashion as your text. This is intentional. There are many different ways of approaching a problem or idea. Your book will present one, and I will present another, hopefully giving you a better chance of understanding the concepts. The challenge for you will be to stay ahead of the lecture by *reading the chapter prior to the lecture*. My lecture should then serve as a review/clarification of the text material. If you don't understand the lecture at any point, please ask questions!

There is a diversity of students in this class. Some performed well in high school chemistry; some have no prior chemistry and fear even its name. I will work with the most phobic and terrified of students if they also work. The students who perform the best in my class are those who work the hardest, not those with the greatest prior preparation. I recommend a *daily* dose of outside study in this course – usually two to three hours a day.

HOMEWORK:

The more problems you work in this class, the more you will enjoy the class and understand the material, and the better you will perform on exams. As already stated, work the sample questions and problems provided throughout the text. GOB chemistry = problem solving.

In addition to the recommended even problems, there is a more formal on-line homework assignment. Assignments will differ in time commitment. You might complete some assignments in less than two hours; others will take over four hours to complete. Do not wait until the due date to start working on these. As you know, computers and computer systems (including Washburn's) are not always reliable. You have been given sufficient notice as to when these are due.

On-line homework may be accessed at <http://www.masteringgob.com/>. You should have received an access code with the purchase of your text. The Course ID is ST121F2007. Become acquainted with the software through the assigned introduction. This formal homework will work as *extra credit on exams*: Percentage extra credit points on the exam will correspond to your homework percentage grade:

100% - 91% => 7% points; 90% - 86% => 6% points; 85% - 81% => 5% points;
80% - 76% => 4% points; 75% - 71% => 3% points; 70% - 66% => 2% points; 65% - 60% => 1% point

EXAMS:

If you cannot make an exam, you may take the exam prior to the scheduled date or receive a zero. There is a comprehensive make-up exam that allows you to drop your lowest exam score or missed exam. This "Make-Up" exam can only help your final grade; it is also a good review for the final.

EVALUATION POLICY:

Lab* 20%
Exams 60%
Final 20%

GRADES:

A => 100% - 90% D => 69% - 60%
B => 89% - 80% F => 59% - 0%
C => 79% - 70%

*Your overall grade in this course will not be more than one letter grade higher than your laboratory grade.

CALENDAR:

<u>Date</u>	<u>Chapter</u>	<u>Content</u>
8/20	Guest Lecturer	Introduction
8/22	1	Measurements, Units, Metric System
8/24	1	Measurements, Scientific Notation,
8/27	1	Dimensional Analysis, Significant Figures
8/29	1	Calculations, Density, Temperature
8/30	Assignment 2: Chapter 1 On-line Hmwk Due	
8/31	2	Matter/Atoms/Subatomic Particles
9/3	Labor Day Holiday	
9/5	Exam #1: Chapter 1	
9/7	2	Atomic & Mass Number/ Isotopes
9/10	2	Periodic Table/Electronic Energy Levels/Valence Electrons
9/12	2 (Skip pp 76-84)	Atomic Mass/Atomic Size/Ionization Energy
9/14	4.1, 4.2, 4.3	Octet Rule/Ions/Simple Ionic Compounds
9/17	3	Radiation; Half Life
9/19	4	Polyatomic Ions; Bonds
9/20	Assignment 3: Chapters 2 & 3 On-line Hmwk Due	
9/21	Exam #2: Chapters 2 & 3, 4.1 - 4.3	
9/24	4	Molecules/Lewis Structures
9/26	4	Molecular Shape/Polarity/Intermolecular bonds
9/28	4, 6.5, 6.6	Attractive Forces; States; Boiling Points; Enthalpy of Vap
9/29	Assignment 4: Chapters 4 & sections of Chapter 6	
10/1	6.3	Specific heat; heats of reactions
10/3	Exam #3: Chapters 4 & 6	
10/5	5	Mole, Chemical Equations
10/8	5	Stoichiometry
10/10	5	Chemical Reactions: Combustion, Redox, Types
10/12	Fall Break	
10/15	5	Limiting Reactants
10/16	Assignment 5: Chapters 5 & beginning of Chapter 6	
10/17	5	Percent Yield; Empirical Formulas
10/19	Exam #4: Chapters 5	
10/22	7	Kinetic Molecular Theory: Ideal Gas Relations
10/24	7	Ideal Gas Law
10/26	7	Dalton's Law; Gas Phase Reactions
10/29	8	Solubilities; Electrolytes
10/31	8	Concentrations
11/1	Assignment 6: Chapters 7 & 8	
11/2 ‡	8	Concentration Conversions; Dilutions
11/5	Exam #5: Chapters 7, 8	
11/7	9	Kinetics vs. Equilibrium
11/9	9, 10	Equilibrium Constants
11/12	10	Acids/Bases: pH, pOH
11/14	10	Weak Acids/Bases; Salts
11/16	10	Acid Base Reactions; Buffers
11/18	Assignment 7: Chapters 9, 10	
11/19	10	Neutralizations/Titrations
11/21-23	Thanksgiving Break	
11/26	Exam #6: Chapters: 9, 10	
11/28	11	Organic Overview; Saturated Hydrocarbons/Nomenclature
11/30	Make Up Exam (TBA) ST138	
12/3	12	Cis;Trans-Alkenes, Alkynes, Aromatic Compounds
12/5	14.5, 15	Chirality/Carbohydrates
12/7	17, 19	Fatty Acids; Amino Acids
12/11	Comprehensive Final Exam (1:30 PM)	

Referenced Chapters correspond to the required text: General, Organic, & Biological Chemistry, 2nd Ed., Timberlake

‡This is the last day to change from Grade to A/pass/fail or A/Pass/Fail to Grade. Do not change without prior consultation with advisor. This is also the last day to withdraw from a course.

RECITATION:

This is a 5 credit hour class: The three-hour laboratory is considered 1 credit hour. The three-hour per week lecture is 3 credit hours; the one-hour weekly recitation is 1 credit hour. Attendance in recitation is as important to your comprehension and final evaluation as is attendance in lecture. You will work problems in recitation to strengthen your understanding, and get a sense of my expectations; also, this allows me the opportunity to appreciate your strengths and address your weaknesses. Recitation will help you stay current and prepare you for exams. New content may be given during recitation. Exams also may be given during recitation. Bring a calculator, dry-erase mark (for the white board), and notes to recitation.

ADDITIONAL ASSISTANCE:

Part of your tuition dollars have gone toward paying for an SI and tutors for this course. Both you and these students benefit when you use these services.

If you are a student that is not performing up to your own expectations, you may have anxieties or other difficulties impeding your progress. See information on Center for Undergraduate Studies & Programs (CUSP), next page.

If you are a student with a (mental or physical) disability, you may need academic accommodations. See information on Disability Services, next page.

INSTRUCTOR:

Dr. Stephen Angel

Office Hours: Mon: 1-3; Tues: 10-12; Thurs:10-12; Arrangement

Office: Henderson 24; Stoffer 115; ???

Telephone: 670-2266

Email: stephen.angel@washburn.edu

Web page: <http://www.washburn.edu/faculty/sangel/>

Follow the links to CH121 Practice Problems for additional exercises, handouts, recitation questions, and syllabus with link to on-line homework.

GENERAL EDUCATION SKILLS:

This class will teach three general education skills:

1. "Reason Mathematically and Understand Numerical Data": You will learn how to apply mathematical principles to interpret physical events. This requires comprehending numerical representations and logical analysis. These skills will be emphasized in chapters 1, 5-10 of your text, in lecture, on homework and throughout your laboratory exercises.
2. "Process Information Both in Terms of Synthesis and Analysis": Both in the laboratory and in recitation, you will have the opportunity to apply the theory of basic principles to solving problems. In the lab, you will learn how to analyze your own observations in relation to the theory presented in class. In recitation, you will have the opportunity to explain your sequence of reasoning to solve problems. The design of the curriculum and your text requires that you master each principle before proceeding; therefore, these skills will be reinforced throughout the semester and in all chapters.
3. "Solve Problems Using The Methods of Analysis Considering Evidence, Relevance and Validity": Because we are surrounded with physical data, you will learn to discriminate information's value, analyze it for reliability and apply it to answer relevant questions. You will be given more information than needed to solve problems in lecture, recitation and lab. Connections between problems and applicable data will be taught throughout the semester; however, you will especially need these skills developed by chapter 5 for they are essential in comprehending material presented in chapters 5 - 10 with attendant lab and recitations sections.

Mission of the University:

Washburn University shall prepare qualified individuals for careers, further study and life long learning through excellence in teaching and scholarly work. Washburn University shall make a special effort to help individuals reach their full academic potential. *Washburn University Board of Regents, 1999*

Mission of the Chemistry Department:

Consistent with the mission of the University and the College of Arts and Sciences, the Department of Chemistry is dedicated to providing a broad spectrum of students with the necessary understanding of chemical principles to become successful, contributing members of their social, professional and/or occupational communities.

Academic Misconduct Policy:

All students are expected to conduct themselves appropriately and ethically in their academic work. Inappropriate and unethical behavior includes (but is not limited to) giving or receiving unauthorized aid on examinations or in the preparation of papers or other assignments, or knowingly misrepresenting the source of academic work. Washburn University's Academic Impropriety Policy describes academically unethical behavior in greater detail and explains the actions that may be taken when such behavior occurs. For guidelines regarding protection of copyright, consult www.washburn.edu/copyright/students. For a complete copy of the Academic Impropriety Policy, contact the office of the Vice President for Academic Affairs, Morgan 262, or go on-line to: www.washburn.edu/admin/vpaa/fachdbk/FHsec7.html#VIII

Disability Services:

The Student Services Office is responsible for assisting in arranging accommodations and for identifying resources on campus for persons with disabilities. Qualified students with disabilities must register with the office to be eligible for services. The office MUST have appropriate documentation on file in order to provide services. Accommodations may include in-class note takers, test readers and/or scribes, adaptive computer technology, brailled materials. Requests for accommodations should be submitted at least two months before services should begin; however, if you need an accommodation this semester, please contact the Student Services Office immediately.

Location: Student Services, Morgan Hall Room 150

Phone: 785-670-1629 or TDD 785-670-1025

E-Mail: student-services@washburn.edu

Students may voluntarily identify themselves to the instructor for a referral to the Student Services Office.

Center for Undergraduate Studies and Programs (CUSP):

As a Washburn student, you may experience difficulty with issues such as studying, personal problems, time management, or choice of major, classes, or employment. The Center for Undergraduate Studies and Programs (Office of Academic Advising, Educational Opportunity Program, and Office of Career Counseling, Testing and Assessment) is available to help students either directly through academic advising, mentoring, career counseling, testing and developing learning strategies or by identifying the appropriate University resource. If you feel you need someone with whom to discuss an issue confidentially and free of charge, contact CUSP in Morgan 122, 785-670-1299, advising@washburn.edu.

Withdrawal Policy:

During fall and spring semesters, students may withdraw from full semester courses through the second week of class with no recorded grade. From the third through the eleventh week a "W" is recorded for any dropped course. Beginning with the start of the twelfth week, there are NO withdrawals, and a grade will be assigned for the course. For short-term or summer course deadlines, please check the appropriate Semester/Session Course Bulletin Web Site (www.washburn.edu/schedule).