

CHEM 32 - Lecture Syllabus

Fall 2009

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Office Hours: Tuesday 2:30 - 3:00 pm, 5:15 - 6:15 pm, in S-223
Thursday 11:30 - 12:00, in S-223
or by appointment

Class Meetings: Tuesday 6:30-9:30 pm, Room S-136

Course Description: This is a one-semester introduction of general, organic, and bio-chemistry. The course is designed to prepare students for a degree in a health-related area, for Microbiology or Physiology at CCSF, or for biotechnology certificate programs. **NOTE:** Chem 32 does NOT satisfy as a prerequisite for Chem 101A or Chem 103A; Chem 40 is a more appropriate course for students interested in preparing for 101A or 103A.

Required Materials:

1. *General, Organic & Biochemistry*, Fourth Preliminary Edition, by James Armstrong; Cengage Learning, 2008.**
2. *Chemistry 32 Laboratory Manual*; CCSF, 2007.
3. A simple, non-programmable scientific calculator. (such as Texas Instruments TI-36)
4. For laboratory, a pair of splash safety goggles. (available in bookstore annex)

**Textbook note: This is a preliminary edition. This edition was used at CCSF during the Fall 2008 and Spring 2009 semesters. You may use the previous edition (Third Preliminary Edition), but it will be your responsibility to refer to the homework problems in the Fourth Preliminary Ed. Earlier editions are not appropriate. Also note that the text is printed in black/white, but comes with a CD containing a color version of the text in PDF format.

Laboratory: You must also be enrolled in Chem 32 laboratory section 042 or 043, both Thursday 6:30-9:30 pm. The topics covered in lab should reinforce and enrich the topics covered in lecture. Refer to your lab instructor for more information regarding lab.

Attendance: Attendance at all lectures and labs is required. There are no make-up quizzes or exams. It is your responsibility to find out what assignments, due dates, and material you missed. If you stop attending class (i.e. miss 3 consecutive quizzes and/or homeworks), you are subject to being dropped from Chem 32 or receiving an F in the course. It is **your responsibility** to withdraw from the course if you stop attending.

Please arrive to lecture on time. Lecture will begin promptly at 6:30 pm. Arriving earlier is appreciated!

Please turn off ringing tones of wireless devices.

DSP&S: If you require a reasonable accommodation for a disability (including invisible disabilities such as chronic illness), please contact me and Disabled Students Programs and Services (Rosenberg Library, Room 323) as soon as possible.

Academic Integrity: Members of any community have an absolute obligation and responsibility to present work considered their own which is truly theirs and no others. Dishonest or unethical behavior will not be tolerated. Academic dishonesty includes, but is not limited to, giving or receiving unauthorized aid in any form, looking at another student's exam, allowing another student to copy off your exam, use of unauthorized materials (such as lecture notes, crib sheets, or textbooks) during an exam; copying or allowing another student to copy lab reports, recording laboratory data that was not observed, use of programmable calculators to store formulas, equations, or constants. Incidents of academic dishonesty can be grounds for failing the entire course.

Criteria for Determining Final Grade: Final letter grades for the course will be assigned based on the percentage of the total possible points you earn from contracts, homework, quizzes, exams, and laboratory.

Goals and Commitment Contracts (1%): In the beginning of the semester, you will sign a contract acknowledging and accepting responsibility for adhering to class policies regarding your attendance, participation, and contribution to a positive learning environment. In addition, you will evaluate your goals and commitment to Chemistry 32. Later in the semester, you will re-evaluate your goals and commitment to Chemistry 32.

Homework (6%): There will be approximately sixteen, 4-point homework assignments due every class, but only the best fifteen scores will count toward your grade. All homework assignments will be collected at the **beginning of class (6:40 pm)**. Homework submitted late, but within three days of the due date will be subject to a 50% point reduction. Homework submitted after three days from the due date will receive no credit.

Quizzes (24%): There will be thirteen short, 20-point quizzes every class except on exam days, but only the best twelve scores will count toward your grade. Quizzes will be given at the **beginning of class (6:45 pm)**; late students will not be given more time. The quizzes will consist of material covered since the last quiz. If you miss a lecture during which a quiz was given, that is the quiz that will be dropped. There are no make-up quizzes. [Note: Some of the quizzes may be partner-quizzes in which you will work with a partner. I'll give you more details in this case.]

Midterms Exams (30%): There will be three midterm exams, each worth 100 points. Make up exams will not be given under any circumstances. See schedule below for exam dates and makes plans accordingly.

Final Exam (19%): The final exam will be comprehensive, covering material from the entire semester. It is scheduled for **Tuesday, December 15** from 6:30 - 9:30 pm. Please take this into account when planning your schedules.

Laboratory (20%): Your laboratory points will come from your lab instructor in terms of a percentage. Your lab instructor will provide more details regarding lab expectations. You will not receive a separate letter grade for lab. However, **you must pass both the lab and lecture portion to pass Chem 32.**

Problem Solving Notebook: It is highly recommended that you maintain a notebook containing all your outside-of-class work including, but not limited to the exercises from the book, assigned homework problems, question you have during or outside of lecture, problems from study-groups or tutoring sessions. You will use this notebook to document your learning and your own problem-solving strategies. A high-quality problem solving notebook will be worth some **extra credit** at the end of the semester!

	Possible Points
Goals Contracts	10
15 Homework	60
12 Quizzes	240
3 Midterm Exams	300
Final Exam	190
Laboratory	200
TOTAL POINTS	1000

A = Excellent	88 – 100%
B = Good	75 - 87%
C = Satisfactory	60 - 74%
D = Passing, less than satisfactory	50 - 59%

Thoughts on succeeding in Chem 32: Chemistry is usually thought of as a difficult subject. First of all, a chemistry student must learn a *new language and symbols* and then be able to converse in this language! Secondly, learning chemistry requires a large amount of effort and *time, time, and more time*.

Recommendations on how to approach this course with success:

1. Review the topic outline in the syllabus and skim the corresponding sections in the textbook *before* coming to lecture. Pay attention to new vocabulary words. This will help you focus during lecture.
2. Take good notes *and* listen carefully during lecture. Ask questions during class.
3. Study/ rework your lecture notes soon after class.
4. Thoroughly read the text sections covered in lecture. *Repetition is essential* to mastering the basics.
5. Do the relevant problems from the textbook in your Problem Solving Notebook. Ask yourself, "what facts/ concepts are being applied here?" with each problem. *Working through practice problems is crucial to learning chemistry*. Force yourself to struggle with the problem for some time; this is where your best learning will occur. Test your knowledge by solving problems with no outside help.
6. Record (document) all your problem solving, questions, errors/corrections, strategies for studying and learning, hints to yourself, etc. in your Problem Solving Notebook throughout the semester.
7. Make sure you do some problems and studying on your own, without outside help. It is very important that you test *your own* knowledge before a quiz or exam.
8. Don't fall behind; it will have disastrous consequences. Even the brightest students cannot learn chemistry by cramming before an exam. Make sure the time you put in is *quality*, not just quantity.
9. If you're stumped, get help as soon as possible. Possible sources include:
 - my regular office hours or extra appointments
 - Learning Assistance Center, Rosenberg Library, room 207
 - peer study groups

Important Dates:

- Friday, September 4: last day to add
 Friday, September 11: last day to drop without receiving "W" on permanent record
 Friday, November 20: last day to withdraw with a grade of W. Do not assume I will withdraw you!

Tentative Lecture Schedule: This topic schedule is tentative and may shift slightly, but exam dates should remain the same.

WEEK	DATE	TEXT	LECTURE TOPICS, EXAMS	QUIZ, HOME- WORK DUE
1	Aug 18	Ch. 2	Introduction, matter, elements, atoms, subatomic particles, isotopes, formulas, electrons, periodic table	
2	Aug 25	Ch. 3	Octet rule, covalent bonding, Lewis structures, naming covalent compounds, ionic compounds, ionic formula, polyatomic ions, naming ionic compounds	HW 1 Quiz 1
3	Sept 1	Ch. 4	Energy, states of matter, attractive forces, physical properties	HW 2 Quiz 2
4	Sept 8	Ch. 5	Solutions, electrolytes, solubility, percent concentration, moles, molar mass, molarity	HW 3 Quiz 3
5	Sept 15	Ch. 5 Ch. 6	Osmosis, Dialysis, dilution Change, chemical reactions, chemical equations, mass relationships in reactions	HW 4 Quiz 4
6	Sept 22	Ch. 6 Ch. 7	EXAM 1 (Chapters 1-5) Energy relationships in reactions, rates of reactions, equilibrium, Water and pH scale	HW 5
7	Sept 29	Ch. 7	Acids, bases, acid-base reactions, amphiprotic molecules	HW 6 Quiz 5
8	Oct 6	Ch. 7 Ch. 8	Buffers Linear and branched alkanes, cycloalkanes, isomers and naming, alkenes, alkynes,	HW 7 Quiz 6
9	Oct 13	Ch. 8 Ch. 9	Aromatic compounds Hydration/dehydration reactions, alcohols, chirality, phenols, thiols	HW 8 Quiz 7
10	Oct 20	Ch. 10	Hydrogenation/dehydrogenation reactions, oxidation/reduction reactions, aldehydes, ketones, carboxylic acids, biological redox and pathways	HW 9 Quiz 8
11	Oct 27	Ch. 11	Organic acids /bases and reactions, amines and reactions	HW 10 Quiz 9
12	Nov 3	Ch. 11 Ch. 12	EXAM 2 (Chapters 6-10) Acids/bases and biology Condensation reactions, ethers, esters, amides, phosphates	HW 11
13	Nov 10	Ch. 12	Polymers, hydrolysis reactions, pH effects	HW 12 Quiz 10
14	Nov 17	Ch. 13	Amino acids, peptide bonds, protein structure	HW 13 Quiz 11
15	Nov 24	Ch. 13 Ch. 14	Enzymes, cofactors, amino acid sources Monosaccharides, optical isomers	HW 14 Quiz 12
16	Dec 1	Ch. 14	EXAM 3 (Chapters 11-13) Glycosidic linkages, polysaccharides, fatty acids, triglycerides, membrane lipids	HW 15
17	Dec 8	Ch. 14	Steroids, lipoproteins, dietary sources Catch-up	HW 16 Quiz 13
Dec 15			FINAL EXAMINATION, 6:30 – 9:30	