

**Instructor:** Prof. George Wiger

NSM C-305

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Students should use email as the primary means of communicating with the instructor. **Do not leave voicemails as the instructor has no clue as to how to retrieve them.**

Class webpage: <http://chemistry.csudh.edu/faculty/george/>

Office Hours: TuTh 9:15-10:00am, 12noon-12:30pm.

Also available from TuTh 1:30-3:20 in NSM C352

**Textbooks:** Chemistry, 7th Edition, Zumdahl and Zumdahl  
General Chemistry Laboratory Manual

**Additional Required Material:**

Calculator or slide rule

Laboratory notebook which makes copies

Laboratory safety goggles

At least ten pieces of millimeter graph paper

**LECTURE SCHEDULE**

Week of	Topic	Reading
Jan. 26, Feb 2	Introduction Props of Solutions	Ch. 11
Feb. 9,16	Kinetics <b>Exam 1-Feb 19</b>	Ch. 12
Feb. 23, Mar 2	Equilibrium	Ch. 13
Mar. 9, 16	Acids and Bases <b>Exam 2-Mar 19</b>	4.8, Ch.14, 15.1 to 15.5
Mar. 23	Solubility Equilibria Complex Ions	4.6-4.7, 15.6, 15.7, 15.8
Mar. 30	Spring Break	
Apr. 6	Entropy	Ch. 16
Apr. 13, 20, 27	Oxidation/reduction <b>Exam 3-Apr 23</b>	4.9-4.10, Ch. 17
May 4, 11	Selected Topics	Ch. 18-22
May 18	<b>Exam 4-Date TBA</b>	

**Special Note on Chemical Nomenclature:** The proper relationship between compound names and formulae is considered a central issue. Thus, chemical nomenclature will be an ongoing topic throughout the course.

Students should expect the content of exams and quizzes to reflect this emphasis.

## LABORATORY SCHEDULE

Week of	Experiment
1/26	Check-in and safety
2/2	Close Packing and Coordination Theory
2/9	Molecular Weight By Freezing Point Depression
2/16	Shapes of Molecules
2/23	Iodination of Acetone
3/2	Qual Analysis of Group I Ions
3/9	Hydrolysis of an Ester
3/16	GEW and $K_a$ of an Unknown Acid
3/23	Qual. Analysis of Group III Ions
3/30	Spring Recess
4/6	Conjugate Acid/Base Mixtures
4/13	$K_{sp}$ of Lead Iodide
4/20	Electrolytic Processes
4/27	Qual. Analysis of a General Unknown
5/4	Synthesis of a Coordination Compound
5/11	Voltaic Cells-Checkout

All of these experiments can be found in the general chemistry laboratory manual. Details regarding laboratory standards will be discussed in laboratory. The schedule is subject to change based upon material availability.

## GRADING

Grades will be based upon the total points earned from the following categories:

Exams( 4 exams, each worth 100 points)	400
Laboratory	150
Quizzes-see detail below	100
Homework-see detail below	<u>100</u>
Total Possible	750

### WWW Based Homework

This class will make extensive use of on line homework. In general, assignments will be posted on the web on Tuesday at 10:00am and are due by 9:00am the following Tuesday. The links to the homework system and problem solving tutorials are found on the instructor's homepage. Students should expect to spend a **minimum of one hour** per week on the assignments and should budget time appropriately. The following guidelines apply:

1. Given the period allowed for the assignments to be completed, no allowances will be made for either network failures or a failure in student's own computer.
2. If more than 5 problems are assigned, you may submit the assignments in portions equal to one half the total number of problems assigned. Smaller portions cannot be submitted.
3. You may repeat an assignment as often as you wish and will be given the highest score earned.

**However, you may only repeat a page during the original assignment period.**

4. Late or makeup assignments **are not accepted** under any circumstances
5. Points are allotted as follows, for each page assigned:

>80%            10 points

<80 >50%       6 points

6. On some assignments, the standard will be a minimum number of correct attempts, with a restriction on the total attempted.
7. **Name Submission**-When submitting your results, pay close attention to how your name is entered to ensure that you are properly credited. Use the following guidelines.
  - a. Always use the same name and do not use any punctuation (commas)
  - b. It is **strongly recommended** that the name follow the format: **last first MI** all in lower case, spaced **without commas**. Example: **smith john j**
  - c. When submitting your homework, make certain that you send it to "**Wiger-112**"
8. There is a set of pages, identical in format to the homework, which are available for problem practice. The link is on the instructor's home page. These pages can also be downloaded as a zip file and installed on individual computers, so that network connection is not required for their use. Network connection is required for doing the homework The link to the download file is on the instructor's homepage.

### Quizzes

Brief (10 minutes max) quizzes will be given often (at least weekly, probably more often). Typically there are ~20 quizzes per semester. You should expect a quiz every day you come to class. Regardless of the number of quizzes given, the lowest three scores will be dropped.

### Exams

There will be four exams. Each exam is equally weighted. There is no comprehensive final in this course. The dates are given in the course schedule, above. The format for exams and quizzes varies a little, but the emphasis is on problem solving and they are **never multiple choice**. Details on what will be covered on a given exam will be provided.

### Survival Hints

This is a rigorous and comprehensive course with high standards. There is no magic formula or list of things

that ensures the student will complete the course successfully. However, experience has shown that a few common sense items can make passage through the course much easier. Intellectual ability is seldom, if ever, the cause of lack of success.

1. Recognize that the instructor is a resource and utilize him. Do not hesitate to contact him whenever you feel it is necessary. Office visits are encouraged and welcomed. Email is read very frequently and responses are usually sent within an hour.
2. Attend
3. Keep up
4. Participate/Ask Questions
5. Do the homework and go well beyond the assignments given. Do a lot of practice problems.
6. Visit the course web site for needed information, particularly posted assignments, notes and scores.

### **Grading Scale**

>=90%	A
80-90%	B
70-79%	C
60-69%	D
<60 %	F

The intermediate grades (+,-) will be used at the discretion of the instructor and there may be some minor adjustments to the above scale to fit class performance (curve the grades). Such adjustments are usually very minor (less than 2 points) and will only lower the grade cutoff points. Thus, above 90 will always be an A. The 60% point for a passing grade will probably not be changed. In addition, a **minimum score of 70%** must be earned in the laboratory to receive a passing grade in the course, **all laboratory experiments must be performed and a report submitted for each experiment.** Failure to perform a laboratory experiment or submit a report will result in an automatic grade of "F" being assigned **for the course.** Additional information on laboratory performance and standards will be provided by your laboratory instructor. Exceptions to the above requirements will be made only in extreme cases.

### **MAKE-UP EXAMS AND QUIZZES**

Exams and quizzes are given only during the scheduled period. **THERE WILL BE NO MAKE-UP EXAMS OR QUIZZES.** Quizzes are given during the first 10-15 minutes of the period and **THERE WILL BE NO ADDITIONAL TIME GIVEN TO STUDENTS ARRIVING LATE.**

### **LECTURE NOTES**

Lecture notes are posted online in PDF format. Every effort will be made to post the notes for each week before the Tuesday lecture, although this is not guaranteed. It is often useful, if possible, to print the notes before class and bring them with you. The online notes are not a substitute for class attendance and the student is certainly aware that many things happen in "real time" during the class discussions which are not covered by formal notes.

### **CALCULATORS**

A modern calculator is an indispensable tool in the performance of calculations. Obtain a good quality, multifunction calculator and learn how to use it. Be advised that the use of a calculator during an exam or quiz is a privilege, not a right. If appropriate, the instructor may choose to ban the use of the calculator during a test or quiz.

### **Class standards and Academic Integrity**

Fundamental to this course is the principle that it will be conducted in an atmosphere of mutual respect and courtesy among all of the participants. This includes such basic issues as turning off of cell phones, ipods, etc

during class time. The highest standards of academic integrity will be applied. Students should refer to the University Catalogue for the statement on University Standards. All suspected violations will be immediately referred to the Vice President of Student Affairs for proper resolution.