

**Lecture:** Thursday 9am in CS76  
**Instructor & Email:** Dr. Johnny W. Pang (pang@chem.ucla.edu)  
**Office Hours:** Tuesday 10-11 and Thursday 10-11 in 2070A Young Hall  
**Laboratory Room(s):** 1370 & 1379 Young Hall  
**Enforced Requisites:** Courses 20A (C- or better) and 20B (either concurrent enrollment or C- or better)

**Virtual Office Hours:** Chemistry 20L will use the Department of Chemistry's Virtual Office Hour (VOH) for posting report guidelines and office hours on the Internet. The address is <http://voh.chem.ucla.edu/>.  
**Course Web Site:** Go to the course VOH page and you will find a link to the class Web site.

**Section Instructor:** Teaching Assistant. Times and locations of all TA office hours will be posted on VOH by the end of the second week of the quarter. You are encouraged to attend office hours scheduled by any of the TAs.

**Lecture Schedule:**

9/28	Introduction, Measurements and Errors	11/2	Chemical Kinetics
10/5	Theory on Beer's Law and Concentration Units	11/9	Theory on Distillation & GC
10/12	Introduction to Acids and Bases	11/16	Acid Base Equilibrium (I)
10/19	Phosphate in Detergent	11/30	Acid Base Equilibrium (II)
10/26	<i>Midterm Exam (No Make Up Exam)</i>	12/7	<i>Final Exam (No Make Up Exam)</i>

**Lab Preparation:** You must be prepared for the experiment before you come to lab if you wish to complete the experiment in the time allotted. *The course is impacted; there is neither make-up time in the course nor space for you to work in other sections. If you miss a lab, you MUST discuss the issue with the course instructor to see what other options you may have to complete the experiment.* You must do your lab work in your scheduled period. In preparation for the lab, you should first study the pertinent sections in the text, review the lecture notes pertaining to the experiment, then view (and possibly review) the appropriate videos (refer to lab schedule for on-line access of the videos) for any new techniques to be used in the experiment. If a pre-lab report is required for the experiment, you MUST turn in the pre-lab report to your TA at the *beginning* of the lab period. Refer to the VOH for the specific report guidelines. During the lab period, you will complete the data tables and record any other observations about the experiment. A copy of the in-lab data must be turned in to the T.A. at the end of the lab period. Late pre-lab work will count as ZERO. **NOTE:** *Technique videos can be viewed on the Internet (refer to the lab schedule for Web address).*

**Post-lab Reports:** The remainder of the lab report, - the data analysis, error analysis, and conclusions - is to be completed in the lab notebook after the experiment is completed (check VOH for guidelines). The post-lab report must be turned in to the T.A. at the start of the lab period listed under "Due Date" on your lab schedule. Unexcused late post-lab reports will accrue a penalty of FIVE percent of the grade PER DAY. No reports will be accepted after 5:00 p.m. on the last day of instruction.

**Required Text:** Chemistry Experiments for Physical Science and Engineering Majors, 2<sup>nd</sup> Ed, Russell and Henary

**Recommended Text:** *Principles of Modern Chemistry* 5<sup>th</sup> Ed, Oxtoby, Gillis and Nachtrieb, , Thomson Learning Inc. or *Chemical Principles* 5<sup>th</sup> Edition, Zumdahl, Houghton Mifflin

**Safety Goggles (OSHA APPROVED) and Protective Clothing:**

Eye protection must be worn in all laboratories whenever any laboratory work is in progress. Recommended safety goggles may be purchased from the Undergraduate Chemistry Fraternity - AXE - Room 1275 Young Hall. A full-length lab coat, closed-toe shoes, and long pants must be worn when doing experimental work. Lab coat can be purchased from AXE. Shorts and sandals are NOT allowed in the laboratory. You will be dismissed from the laboratory if you are not wearing appropriate protective clothing. Latex gloves will be provided in the laboratory if needed.

**Laboratory Notebooks:**

Laboratory notebooks designed for **duplicate records** are available from the Undergraduate Chemistry Fraternity - AXE - Young Hall 1275 and the student store. All experimental data and complete reports will be recorded in this laboratory notebook.

**Grading:** *(To receive a passing grade (C-), you must complete all the experiments and reports and receive at least 50% of the points in EACH category). No student can pass the course without taking the final exam.*

Exam(s) must be taken during the lecture section in which you are officially enrolled. Any missing exam will count as ZERO. There is NO MAKE UP for missing exam regardless of reasons.

Preparation for lab – pre-lab assignments	100	22%
Performance in lab – technique, accuracy of work and lab clean up	40	8%
Documentation of lab work - lab reports	170	35%
Conceptual Understanding of lab	170	35%
(i) (CPR) Writing Assignments (2 assignments)	40 points	
(ii) Midterm (No Make Up Exam)	50 points	
(iii) Final (No Make Up Exam)	80 points	

**Total Points** 480 100%

Week	Lab Activity	Points				
		Pre-lab Reports & Study Questions	Post-lab Reports	Technique and Accuracy	CPR Writing Assignments	Exams
1	Check In, Safety, MSDS		10			
2	Pipets and Graphing	30	15			
3	Solutions Concentration	15	30	5		
4	Indicators Titration	15	30	5	TBA	
5	Phosphate in Detergent	5	15	5		
6-7	Chemical Kinetics	15	35	5	TBA	50
8	Distillation and GC	10	20	5		
9	Vinegar Analysis	10	15	5 and 5		
10	Lab Clean Up			5		80
	<b>Totals</b>	<b>100</b>	<b>170</b>	<b>40</b>	<b>40</b>	<b>130</b>

*Chemistry 20L is graded on a mastery basis.* Your mastery of the course will be measured through your performance on the exams, reports, experimental accuracy, calculations and analysis of data, and your lab technique. Qualities that will be considered in this latter category include your performance in observing safety regulations such as wearing eye and personal protection in lab, following safe lab procedures, working independently and coming to lab prepared, completing the assigned work within the scheduled laboratory periods, coming to lab on time and turning in assignments promptly, and disposing of waste in proper receptacles. Letter grades are based on the course point total. (Please note these grades are assigned only at the end of the quarter when all items have been graded; the percentage on a portion of the course is not a meaningful measure of your total performance.) Plus and minus grades are frequently assigned, but final decisions to award these grades are not made until the end of the quarter when all the student data have been evaluated. As a rule of thumb, the course grades are assigned as follows:

**A= 90-100%; B= 80-90%; C= 70-80%; D= 60-70%; F= <60%**

**Cheating, Plagiarism, Dishonesty:** All cases of cheating, plagiarism, or dishonesty will be reported to the Dean of Students. All work that you submit for grading must be your own work. All references **MUST** be properly cited.