

LAST DAY TO DROP THE COURSE – April 16 (Friday)**Instructor:** Dr. Johnny W. Pang**Email:** pang@chem.ucla.edu**Office:** 2070 A Young Hall**Office Hours:** T 1-2pm & R 10-11am in 2070A Young Hall**Lecture:** M 2 – 2:50pm in CS 24**Lab:** Various times in 1370 Young Hall

Virtual Office Hours: Chem 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 [20L VOH](#) page and you will find a link to the class Web site.

Enforced Requisites: Courses 20A (C- or better) and 20B (co-requisite OR if completed C- or better)

Required Texts: Chemistry 20L Lab Manual for Physical Science and Engineering Majors & laboratory notebook with duplicate carbon copies (refer to the other side of this syllabus for more details).

Recommended Text: *Principles of Modern Chemistry*, Oxtoby, Gillis & Nachtrieb, 5th Edition, Thomson Learning Inc. (or any other equivalent general chemistry text)

Bulletin Board: The course bulletin board is located on the wall across from rooms 1217 and 1225.

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:

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|------|--|------|--|
| 4/5 | Introduction; Measurements & Errors | 5/10 | Theory on Distillation & GC |
| 4/12 | Theory on Beer's Law & Concentration Units | 5/17 | Acid Base Equilibrium (I) |
| 4/19 | CPR & Introduction to Acids & Bases | 5/24 | Acid Base Equilibrium (II) & Analysis of Titration Graphs |
| 4/26 | Phosphate in Detergent | | |
| 5/3 | Chemical Kinetics | 6/7 | Final Exam (NO MAKE UP) |

Exam(s) must be taken during the lecture section (or during the lab section if the exam is in-lab exam) in which you are officially enrolled. Any missing exam will count as ZERO.

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.**

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.

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 heavy vinyl or rubberized apron or full-length lab coat, closed-toe shoes, and long pants must be worn when doing experimental work. Lab coat can be purchased from AXE. If you wear an apron, your shirt must cover your shoulders and upper arms. 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 for those experiments using chemicals that are hazardous to skin.

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. **Note: AXE only accepts personal check or money order when purchasing lab equipment. AXE DOES NOT accept cash or credit card!**

Grading: *To receive a passing grade (C-), you must complete all the experiments (including reports) and receive at least 50% of the points in EACH of the following grading category. No student can pass the course without the final exam. NOTE: The instructor reserves the right to modify the 50% at the end of the quarter after all the scores are tabulated.*

| | | |
|--|-----------|------|
| Preparation for lab – pre-lab assignments | 85 | 18% |
| Performance in lab – techniques, accuracy of work & lab clean up | 40 | 9% |
| Documentation of lab work - lab reports | 160 | 36% |
| <i>Conceptual Understanding of lab -</i> | 165 | 37% |
| <i>(i) On-line (CPR) Writing Assignments (3 assignments)</i> | 45 points | |
| <i>(ii) On-line Midterm (IN LAB – refer to lab schedule)</i> | 45 points | |
| <i>(iii) Final (IN LECTURE – refer to the other side of the syllabus)</i> | 75 points | |
| Total Points | 450 | 100% |

| Week | Lab Activity | Points | | | | |
|------|---------------------------|-----------------------------------|------------------|----------------------|--------------------------|------------|
| | | Pre-lab Reports & Study Questions | Post-lab Reports | Technique & Accuracy | CPR Writing Assignments | Exams |
| 1 | Check In, Safety | | | | | |
| 2 | Pipets & Graphing | 30 | 10 | | | |
| 3 | Solutions Concentration | 10 | 30 | 5 | Significant Figures (15) | |
| 4 | Indicators Titration | 10 | 35 | 5 | | |
| 5 | Phosphate in Detergent | 5 | 15 | 5 | | |
| 6 | Midterm Exam | | | | Graphing (15) | 45 |
| 7 | Chemical Kinetics | 10 | 35 | 5 | | |
| 8 | Distillation & GC | 10 | 20 | 5 | Titration (15) | |
| 9 | Vinegar Analysis | 10 | 15 | 10 | | |
| 10 | Final Exam & Lab Clean Up | | | 5 | | 75 |
| | Totals | 85 | 160 | 40 | 45 | 120 |

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= 65-80%; D= 50-65%; F= 0-50%

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.