Chemistry 14CL  Course Syllabus  Spring 2014

Instructor:  Dr. Alfred Bacher  
Office:  Young Hall 3077E  
Lecture:  Monday, 11:00 – 11:50 am in CS 50  
Course Website:  www.chem.ucla.edu/~bacher  
Email:  bacher@chem.ucla.edu

Office Hours:  Monday: 10-11 am & 4-5 pm, Tuesday: 10-11 am, Wednesday: 11-12 pm, Thursday: 10-11 am and Friday: 11-12 pm in YH 3077F  

Virtual Office Hours:  Chem 14CL will use the Piazza for virtual office hours (www.piazza.com/ucla/spring2014/chem14cl). You may submit questions and receive answers electronically (from fellow students and/or the instructor).

Laboratory Room(s):  YH 1336 & YH 1340  

Required Texts:  
(1) Chemistry Experiments for Life Science Majors (2nd edition) by A.A. Russell, Burgess Publishing (from 14BL)  
(2) Laboratory notebook with duplicate carbon copies (from 14BL)  
(3) Techniques in Organic Chemistry (3rd edition) by Mohrig, Hammond and Schatz (from 14BL)

Recommended Text(s):  
(1) A. Bacher, 14 CL Practice Problems and Exam Collection (Spring 2014) available from Course Reader Material  
(2) Peter Atkins and Loretta Jones, Chemical Principles – The Quest for Insight (5th edition) (or any other equivalent general chemistry text)  
(3) W. H. Brown, Organic Chemistry (6th edition) (or any other similar text)

Tentative lecture schedule:  

March 31  Safety, Administrative Issues/Polyprotic acids/Amino acids titration (Part I)  
April 7  Amino acids (Part II) & Beer’s Law  
April 14  Extraction & UV-Vis Spectroscopy  
April 21  Infrared spectroscopy & Mass Spectrometry  
April 28  Electrochemistry & Aldol Condensation  

May 5  Midterm (IN CLASS)*  
May 12  Chromatography (TLC) & 13C-NMR Spectroscopy  
May 19  Distillation & Gas Chromatography  
May 26  No lecture (Memorial Day Holiday)  
June 2  General Review  
June 12  FINAL EXAM (3:00 pm - 6:00 pm) (Cover ALL Topics in 14CL) *†

* NO MAKE UP EXAM; any missing exam will count as ZERO.  
*† NO REGRADE FOR FINAL EXAM.

Lab Preparation:  To complete the laboratory work on time you must prepare for the period's assignment before your laboratory section meets. The course is impacted; there is neither make-up time in the course nor space for you to work in other sections. 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 videotapes for any new techniques to be used in the experiment. If you still have questions relating to the experimental details, consult a teaching assistant or the course instructor. The duplicate copy of the in-lab data is to be turned in to the teaching assistant at the end of the lab period. Pre-labs are due at the beginning of the lab period. Late pre-lab work will count as ZERO. You will not be allowed to perform an experiment without providing a pre-lab.

**NOTE:** Techniques videotapes can now be viewed on the internet (refer to the lab schedule for web address) and through the campus cable TV network (Channel 22).

**Post-lab Reports:** The remainder of the lab report - the data analysis, error analysis, and conclusions - are to be completed in the lab notebook after the experiment is completed. The original copy of this portion of the report is turned in to the teaching assistant at the start of the following lab period along with any graphs that have been prepared on fine-grid (millimeter) graph paper. Unexcused late post-lab portions of the reports will accrue a penalty of five percent of the grade per day for unexcused late reports. No reports will be accepted after 4:00 p.m. on the last day of instruction (June 6, 2014). Computer programs used to analyze data must be referenced and the instructor may request copies.

**Grading:** *(To receive a passing grade (C-), you must complete ALL the experiments and reports and receive at least 50 % of the points in the exams category.)*

<table>
<thead>
<tr>
<th>Category</th>
<th>Points</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Preparation for lab – Pre-lab assignments</td>
<td>108</td>
<td>17.5 %</td>
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<tr>
<td>Performance in lab - Lab technique &amp; Lab Maintenance</td>
<td>56</td>
<td>9.1 %</td>
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<tr>
<td>Documentation of lab work – Post lab reports</td>
<td>212</td>
<td>34.4 %</td>
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<tr>
<td>Conceptual understanding of Lab - Midterm</td>
<td>80</td>
<td>13.0 %</td>
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<tr>
<td>Conceptual understanding of Lab - Final</td>
<td>160</td>
<td>26.0 %</td>
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**TOTAL** 616 100 %

**Grading Criteria:**

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.

**Chemistry 14CL is graded on a mastery basis.** 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 and the grades have been adjusted; the percentage on a portion of the course is not a meaningful measure of your total performance.) As a rule of thumb, the course grades are assigned as follows:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Letter</th>
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<tbody>
<tr>
<td>90 - 100 %</td>
<td>A</td>
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<tr>
<td>80 - 89 %</td>
<td>B</td>
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<tr>
<td>65 - 79 %</td>
<td>C</td>
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<tr>
<td>50 - 64 %</td>
<td>D</td>
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<tr>
<td>0 - 49 %</td>
<td>F</td>
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**Video Laboratory:**

Operated by the Instructional Media Library, and located in Powell 270. This facility is open daily. Videotapes for assignments on the laboratory schedules will be available for individual student viewing. You are expected to view the appropriate program for the week's experiment **before** your lab section meets.

**Safety Goggles and Protective Clothing:**

A flame-resistant, full-length, lab coat, eye protection, closed-toe shoes, and long pants **must** be worn when performing any experimental work or whenever any laboratory work is in progress. Shorts and sandals do not provide adequate protection for laboratory work. Neither does an open lab coat or eye protection that is not placed in the proper location. You will be barred 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. However, it is advisable to purchase nitrile gloves, which provide better protection than latex gloves. Lab coats and recommended safety goggles may be purchased from the Undergraduate Chemistry Fraternity - AXE - Room 1275 Young Hall. Other styles of goggles are available at local bookstores.

**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.

**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. Group reports must acknowledge the individual contributions of each person, if the work has been shared.