Chemistry 14CL **Course Syllabus** **Spring 2016**

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

Office Hours: Monday: M-F 10-11am and M 4-5 pm in YH 3077

Virtual Office Hours: Chem 14CL will use the Piazza for virtual office hours (*www.piazza.com/ucla/spring2016/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* (4th edition) by *Mohrig, Alberg, Hofmeister, Schatz and Hammond* (**from 14BL)**

Recommended Text(s):
(1) A. Bacher, *14 CL Practice Problems and Exam Collection* (3rd ed., Spring 2016) 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* (7th edition) ***(or any other similar text)***

Tentative lecture schedule:

March 28	Safety, Administrative Issues/Polyprotic acids/Amino acids titration (Part I)
April 4	Amino acids (Part II) & Beer's Law
April 11	Extraction & UV-Vis Spectroscopy
April 18	Infrared Spectroscopy & Mass Spectrometry
April 25	Electrochemistry & Aldol Condensation
May 2	***Midterm (IN CLASS)******
May 9	Chromatography (TLC) & ^{13}C-NMR Spectroscopy
May 16	Distillation & Gas Chromatography
May 23	***General Review***
May 30	No lecture (Memorial Day Holiday)
June 6	***FINAL EXAM (8:00 am -11:00 am) (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 3, 2016***). 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.)*

Preparation for lab – Pre-lab assignments	108	17.5 %
Performance in lab - Lab technique & Lab Maintenance	56	9.1 %
Documentation of lab work – Post lab reports	212	34.4 %
Conceptual understanding of Lab - Midterm	80	13.0 %
Conceptual understanding of Lab - Final	160	26.0 %
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, coming to lab prepared, completing the assigned work within the scheduled laboratory periods, coming to lab on time, 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 between the different sections; 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:

90	**-**	**100 %**	**=**	**A**
80	**-**	**89 %**	**=**	**B**
65	**-**	**79 %**	**=**	**C**
50	**-**	**64 %**	**=**	**D**
0	**-**	**49 %**	**=**	**F**

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.