

CH 204L  
GENERAL CHEMISTRY LABORATORY II

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**Syllabus**

**Lab section:**            01    Tu    2:30-5:20    HL8  
                                 04    Th    2:30-5:20    HL8

**Instructor:** Dale K. Purcell, Ph.D.            **Office:** Henry Hall office 2  
**Phone:** 735-4858                                **email:** dale.purcell@chaminade.edu  
**Office Hours:** T,TH 11:30-12:30, or by appointment.

**Required Materials:**

- lab notebook (composition book)
- scientific calculator
- safety glasses and covered footwear
- lab coat

**Course Description and Learning Outcomes:**

This laboratory course accompanies the CH 204 lecture course. Students will perform experiments in the lab with class discussion of the techniques used and the expected results. The purpose of CH 204L is to continue the development of the laboratory skills learned in CH 203L, and to utilize these methods in the analysis of unknown samples. Copies of the experimental procedures will be handed out prior to the scheduled lab meeting. It is important that you read this material before starting the experiment.

*1 credit. Concurrent registration in CH 204 is required.*

After completion of this course, the student will demonstrate the ability to:

- understand the distinction between qualitative and quantitative chemical analysis.
- identify sources of error in chemical experiments.
- interpret experimental results and draw reasonable conclusions.
- perform accurate and precise quantitative measurements.
- keep legible and complete experimental records.
- collaborate with peers in obtaining and interpreting data.

**Grading:**

The course grade will be based on the total points earned from laboratory reports, pre-lab assignments, worksheets and a lab exam. The following percentages of the total possible points will be used to determine the final course grades:

A 90-100%    B 80-89%    C 65-79%    D 40-64%    Fail < 40%

**Attendance:** Chemistry is, by its nature, a participatory science – *you need to participate in the lab work!* If for some reason you cannot attend a lab meeting, please contact me to agree on a plan to make up the work. It may be possible to attend another lab session, or alternatively, a "dry lab" may be completed which will be worth a maximum of 80% of the total points for that assignment. If no attempt is made to make up the missed work, a score of zero will be given for that experiment.

**Notebooks:** You are required to keep a bound notebook for this course. The first page should be a table of contents and the following pages should be numbered. Entries for each experiment should be dated at the top and have a few sentences that describe the goal of the experiment. All data must be recorded in the notebook in an organized manner. The notebooks will not be collected for grading, but may be checked at any time during lab meetings.

**Lab Quiz:** A lab exam covering the entire semester will be given the last week of classes. You may use your notebook and calculator as resources during this exam.

**Lab Reports:** The lab reports will be evaluated for completion and accuracy of the information required. They should be brief and concise, and contain the following:

- An abstract describing what you did, how you did it and the results obtained
- Any relevant chemical equations
- Sample calculations
- Sources of error and statistical treatment of data

**Student Conduct:** Please refer to the Student Handbook for the CUH policies on Classroom Behavior and Academic Dishonesty.

**Music Devices and Cell phones:** The use of music devices and cell phones is prohibited during all Natural Science and Mathematics classes at Chaminade, unless specifically permitted by your instructor. Use of cell phones and music devices in laboratories is a safety issue. In addition, use of cell phones and music devices in any class is discourteous and may lead to suspicion of academic misconduct. Students who cannot comply with this rule will be asked to leave class and may be subject to laboratory safety violation fines. Please refer any questions to the Dean of Natural Sciences and Mathematics.

**ADA Accommodations:** Students with special needs who meet criteria for the Americans with Disabilities Act (ADA) provisions must provide written documentation of the need for accommodations from the CUH Counseling Center (Dr. June Yasuhara; phone 735-4845) by the end of week three of the class, in order for the instructor to plan accordingly. Failure to provide written documentation will prevent your instructor from making the necessary accommodations. Please refer any questions to the Dean of Students and review the procedures at [http://www.chaminade.edu/student\\_life/sss/counseling\\_services.php](http://www.chaminade.edu/student_life/sss/counseling_services.php).

### Important Lab Rules:

- Students must wear closed-toe shoes at all times.
- Safety glasses and lab coats must be worn when lab work is being carried out.
- Eating, drinking, and smoking are not allowed at any time.
- Do not bring any food or drinks into the lab.

### Spring 2014 CH 204L Schedule

Week	Dates	Experiment
1	1/14, 1/16	Lab check-in
2	1/21, 1/23	<b>Experiment #1:</b> EDTA Titration of Calcium in Limestone
3	1/28, 1/30	EDTA Data Analysis Accuracy, Precision and Error Analysis
4	2/4, 2/6	<b>Experiment #2:</b> Evaluation of the Gas Constant
5	2/11, 2/13	<b>Experiment #3:</b> Spectrophotometric Analysis of Aspirin
6	2/18, 2/20	Aspirin Data Analysis
7	2/25, 2/27	<b>Experiment #4:</b> Redox Titration of Bleach
8	3/4, 3/6	Redox Titration Calculations Solutions Worksheet
9	3/11, 3/13	<b>Experiment #5:</b> Hydrolysis of Ethyl Acetate
10	3/18, 3/20	Hydrolysis cont.
<i>Spring Break 3/24 – 3/28</i>		
11	4/1, 4/3	Hydrolysis Data Analysis
12	4/8, 4/10	<b>Experiment #6:</b> Le Chatelier's Principle
13	4/15, 4/17	<b>Experiment #7:</b> pH Titration of Cola
14	4/22, 4/24	pH Titration Data Analysis
15	4/29, 5/1	<b>Lab Quiz</b>