Prince George's Community College

CHM 1030 General Chemistry II Laboratory Fall 2010
Section CHM-1030-LD01 (26459)

Class Meetings: Lab: Wednesday 8-10:50 AM in CH-316
Lecture: Friday 9-9:50 AM in CH-307

Instructor Information:
name: Dr. Barbara Gage
office: CH-310L
phone: 301.322.0430 (voice mail available)
email/web page: bgage@pgcc.edu http://academic.pgcc.edu/~bgage
You MUST use your OwlMail address when corresponding about college/course issues.
office hours: Mon 9-11 AM; Mon, Wed 1:30-2:30 PM; Fri 10-11 AM and by appointment

Required Materials:
• Further Explorations in the Chemical World: CHM 103 Laboratory Manual, Sinex & Gage, PGCC Press, 2005 (available online at http://academic.pgcc.edu/psc/chm103. Please note: you cannot print activities in the laboratory so come prepared for class with activities already printed.
• TI-83/ TI-83 Plus / TI-84/TI-84 Plus Graphing Calculator (others are usable but instructions are YOUR responsibility)
• Package of graph paper with at least 10 blocks to an inch
• 30 cm ruler and 3-5 different colored pencils for lab and discussion

This course introduces you to a number of analytical methods involving instrumentation and the computer applications. Measurement and its error are examined in detail because of the analytical nature of the course. Some of the experiments expand topics in CHM 1020, while others build on concepts from CHM 1010.

Expected Course Outcomes:
Upon successful completion of this course a student will be able to:
1. use scientific tools for data collection, processing, display, and evaluation, such as the graphing calculator, spreadsheets, and other software;
2. perform, analyze, and report on a variety of laboratory measurements;
3. explain measurement error using a variety of statistical measures;
4. evaluate the accuracy and precision of multiple measurements for an analysis;
5. investigate methods of analysis that are non-visual in detection, such as electrochemical and spectroscopic techniques; interpret data from various analytical techniques, such as potentiometric, photometric, conductometric, and complexometric methods; and,
6. compare and contrast methods of chemical analysis explored in the course.

Completion of ALL laboratory activities is required.
Assessments:
3 performance laboratory activities at 50 points each 150 points
Lab activities and problem assignments 75 points
Culminating Chemical Analysis Task 100 points
2 hour exams at 100 points each 200 points
Attendance/participation 25 points

TOTAL: 550 points

Friday Discussion: Background material, including use of the graphing calculator and computer for calculations and graphing, and practice problems (handouts) will be covered in the discussion. Come to class ready to listen and participate in the discussion of the experiment performed on Wednesday. This Friday session is a very crucial part of this course and new content and information is provided. You will need to put in time outside of lab and class to work on problem sets, projects, laboratory activities, and studying.

Network of Communication: You, as a student, need to be able to exchange information and/or results of laboratories, by phone, e-mail, or at a meeting place. It is your responsibility to make these arrangements before things are due in class.

Attendance and Participation: Be on time to lab and class! Group lab and discussion activities require group participation by all members in a group. It is unfair to the students who arrive on time, so late-comers to the laboratory may find themselves working alone for group activities rather than with a group. Lateness and/or lack of preparation will result in loss of attendance/participation points.

Performance Tasks and other graded labs will consist of the pages from the manual plus additional computations and graphs.
- Each graded activity is due at the end of the lab in which it is done unless otherwise specified. Be sure to check with the instructor if you are not sure of the due date. These labs are submitted to a box in CH-100, not to the instructor directly.
- A penalty of 20% per day will be assessed for late reports or other assignments without acceptable documentation.
- Make-up will NOT be possible without prior consent of your instructor or documentation of a serious problem that causes an absence.

Exams:
Exams cover material given in lectures plus experimental methods and calculations. Exams may include a take-home component that will be provided in the Friday sessions.

If you are going to miss an exam, you MUST:
1. Have a documented excuse; AND
2. Notify your instructor before the exam or within 24 hours after the exam via phone or e-mail.

Once an exam is returned to students and you have not contacted the instructor, you no longer have a make-up option.
**Culminating Chemical Analysis Task:**
Each student working alone will perform a chemical analysis based on laboratory techniques and procedures acquired during the semester. Measurement error and laboratory safety will also be considered in the task. This is a practical laboratory exam to assess the skills you have obtained and your ability to analyze data and is based on the “Expected Course Outcomes” given above. The results will be handed in at the end of the laboratory period. Instructions for this task, including how it is graded, will be provided near the end of the course.

**Cheating and plagiarism will not be tolerated in this class. Maximum penalties will be applied.**

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### CIVILITY STATEMENT
To promote a community of scholarship and civility, everyone at Prince George’s Community College is expected to be respectful, tolerant and courteous towards others at all times, adhere to college policies and procedures, and respect college property. Creating a culture of civility both inside and outside the classroom is everyone’s responsibility.

### CODE OF CONDUCT
The Prince George’s Community College Code of Conduct defines the rights and responsibilities of students and establishes a system of procedures for dealing with students charged with violations of the code and other rules and regulations of the college. A student enrolling in the college assumes an obligation to conduct himself/herself in a manner compatible with the college’s function as an educational institution. Refer to the 2010-2011 Student Handbook, beginning on page 38, for a complete explanation of the Code of Conduct, including the Code of Academic Integrity and the procedure for dealing with disruptive student behavior.

### CODE OF ACADEMIC INTEGRITY
The college is an institution of higher learning that holds academic integrity as its highest principle. In the pursuit of knowledge, the college community expects that all students, faculty, and staff will share responsibility for adhering to the values of honesty and unquestionable integrity. To support a community committed to academic achievement and scholarship, the Code of Academic Integrity advances the principle of honest representation in the work that is produced by students seeking to engage fully in the learning process. The complete text of the Code of Academic Integrity is in the 2010-2011 Student Handbook (pages 40-42) and posted on the college’s website.

Be considerate to other members of the class and don’t be disruptive. **Cell phones or other electronic communication devices are NOT to be on or used in the laboratory or Friday discussion.**

### Where to Get Help:
1. See me during office hours, or call for appointment at other times.
2. Visit the Tutoring Center (call for appointments - 301-322-0748) in Bladen Hall room 107 (other student services - call 301-322-0886).
3. Computer lab (CH-309) hours are posted. See other open labs for hours.
4. Many great student support items can be found on the Physical Sciences and Engineering Department webpage - [http://academic.pgcc.edu/psc](http://academic.pgcc.edu/psc)
Point values for each lab, problem set or exam are in parentheses.

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<th>FRIDAY DISCUSSION</th>
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<td>Use of the Analytical Balance</td>
<td>Introduction</td>
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<td>9/08, 9/10</td>
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<tr>
<td>3</td>
<td>9/15, 9/17</td>
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<td>Simple Statistics with Problem Set (15)</td>
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<td>Scatter in Data</td>
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<td>9/29, 10/01</td>
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<td>Spectrophotometry</td>
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<td>6</td>
<td>10/06, 10/08</td>
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<td>Conductivity Measurements</td>
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<td>Standardization of a Base and Titration of Vinegar</td>
<td>Acid-Base Titration</td>
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<td>pH Measurements</td>
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<td>Characterization of a Weak Acid by Potentiometric</td>
<td>EXAM I (100)</td>
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<td>Kinetics of Crystal Violet Reaction and STELLA</td>
<td>Spectrophotometry as a Tool for</td>
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<td>The Kinetics of Enzyme Reactions - Computer-based</td>
<td>Enzyme Kinetics</td>
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<td>Equilibrium Constant Determination for Fe(SCN)++</td>
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<td>Discovering Intramolecular Interactions Last</td>
<td>IMFs</td>
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<td>day to withdraw with W is 11/19</td>
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<td>11/24, 11/26</td>
<td>NO CLASS</td>
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<td>Studying Vibrations in Molecules (15)</td>
<td>IR Spectroscopy</td>
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<td>Culminating Chemical Analysis Task (100)</td>
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