Portland Community College ♦ Rock Creek Campus♦ Spring 2007
Chemistry 104-General Chemistry (5 credits)
Lecture and Recitation CRN:23512 ♦ Tu/Th 1:00-2:50 PM ♦ Bldg 7#101
Laboratory CRN:25592 ♦ Th 9:00-11:50 AM ♦ Bldg 7#224

Instructor: Carmen I. Martinez, M.S. Office: Building 7 Room 202/33

Phone: 503-614-7417 E-Mail: cmartine@pcc.edu

Office Hours: Mon/Wed: Mon 10-11, Tue 11:30-1; Wed 10-12; and, Th 12-12:30

Required Lecture Text Book : *Introduction to General, Organic and Biochemistry, 8th ed, Bettelhein*

Required Laboratory Experiments: Online Experiments available through library e-serves.

http://library.pcc.edu/screens/reserves.html You MUST have a valid library card to access them.

Materials:

- 1" or 1-1/2" binder with 5 labeled divided sections. **Keep all your returned work here**.
  HW and Group work; Midterms and Quizzes; Extra Credit; Project; and, Lab
- red pen for grading
- scientific calculator
- loose leaf paper
- color pencils or fine point markers

Class Communications: We will be using My PCC course tools to communicate outside of class as necessary. Please make a habit of checking your "My PCC" account daily to keep abreast of important announcements, posted class materials and changes to the tentative schedule.

Description: Chemistry 104 is the first term of a one-year sequence in General Chemistry. It is a five-credit course that includes lecture, recitation and a laboratory section. The course is designed for nursing and allied health sciences as well as such disciplines as fire science, respiratory therapists, medical technology, biotechnology, and dental hygiene requirements. This course assumes no previous knowledge of chemistry, but assumes some algebra.

Class Expectations: You are expected to:

- Own your education and make it count! I am here to help you achieve your goals. ☺
- Seek help during my office hours when you need extra help.
- Come to class prepared-read the assigned material and finished assigned HW problems before coming to class
- Check your "MyPCC" account daily to keep abreast of new announcements and possible changes to tentative schedule.
- Keep up with the work… late work is discounted 50%.
- Please, be on time to both lecture and lab sections.
- Participate in class discussions-- When in doubt ask questions!
- If you miss class get the notes and updates from one of your classmates.
- No make-up tests/ quizzes are allowed without prior arrangements.
- Refrain yourself from the temptation… cheating on exams or quizzes, plagiarizing papers or lab reports is not tolerated and may result in expulsion from class and or school ☹
- Be respectful; refrain from distracting the rest of the class by talking with your neighbors during lecture.
- Turn OFF All cell phones and pagers before coming to class.

Academic Honesty: *It is my responsibility to foster an environment where the free and open exchange of ideas and the enlightening of the mind are the primary concern and goal for us all. This cannot occur in a class where cheating is condoned. In my experience most students are honest, and I will assume that all of you are trustworthy until I am, reluctantly, forced to believe otherwise. However, temptations and opportunities exist for cheating. Any cheating or attempted cheating will result in an automatic grade of zero for that particular exam.*

Attendance: Regular attendance is very important to academic success. Ideally, you should have completed the reading assignment prior to coming to class. Power point slides used during lecture will be available online every week and it will be helpful if you print them, study them and bring them with you. You will get more from the lectures if you have read the material ahead of time. Good note taking is important since some material covered in class will not be in your textbook. After you leave class, it is a good idea to rewrite the notes you take with the help of your text book to clarify questions. My lectures are interactive and I encourage students to feel free to ask questions as the material is presented. Please take advantage of this. At the same time, due to time constrains, some discussions may need to be continued outside class. Mastery of chemistry requires the assimilation of large volumes of material. There is no escaping the fact that you will have to put in a large amount of study time outside of class if you plan on making a high grade. Work the suggested textbook problems and utilize the online resources that complement the text.

Homework: Reading assignments and homework problems will be assigned and checked regularly. Answers to odd numbered homework problems appear at the end of the book, the rest will be posted online or provided in class. *Make sure you are able to do all the homework problems correctly before you turn them in.* Late work will be discounted by 50% of the possible points. If you know you will be out of town or are going through some extraordinary circumstances that will affect your work, please let me know--in most cases we can work something out. A word of advise- DON'T FALL BEHIND!!

Recitation/Group Work : In my experience, group work greatly enhances academic success and helps in the understanding of difficult concepts as it engages students in animated discussions. Students will be working in groups one hr per week during recitation periods. Students will evaluate each other on a weekly basis in terms of preparedness, participation and contribution to the group work. Weekly evaluation sheets are attached.

Quizzes: In most weeks, there will be one 10-minute quiz at the beginning of a lecture session. Please be on time! If you miss a quiz, there will be no make-up opportunity since, most of the time, they will be graded in class. All quizzes will be previously announced during class or through e-mail or in My PCC.

Midterms: There will be two midterm examinations. The exams generally will be a mixture of multiple choice, essay questions and calculations. The questions cover material from the lecture, homework, lab work and textbook. All exams will be announced. No makeup exams will be allowed unless prior arrangements are made with the instructor.

*If you require specific instructional accommodations, please notify me **early** in the course to make the necessary arrangements. You may also want to contact the Office for Students with Disabilities to better determine how to meet your individual instructional needs. We are all here to help!

Extra Credit: Ocassionally, extra credit opportunities will be offered. Usually the work will involve the opportunity to investigate a web site or article given by the instructor and write a short summary about it.

Term Project: The main goals of the project are to illustrate the relevance and application of chemistry in everyday life and to underscore the importance of civic responsibility. The class will work in groups of 3-5 students to complete a chemistry related service project and follow up investigation. Students will then write a 3-4 page summary report and prepare an in-class power point presentation of the results. Students will be evaluated by their peers and group partners, as well as by me. Students will receive both an individual and a group grade for this project. More details will be given in class.

Summary reports must be proofed by tutor at the Writing Center, so please plan ahead! The Center's hours of operation are Mon-Fri 9:30am to 6:00pm.

Students may drop in or make an appointment—I would recommend you call and make an appointment. They are located in Bldg 2/212 within the Student Learning Center. You can contact them directly by calling 503-614-7733.

Final Exam: There will be a comprehensive final exam scheduled for Tuesday of final's week from 11-3pm. If a student obtains a 90% or better in each midterm, and all the work for the quarter has been completed and turned in, the final exam may be substituted by a third midterm *at the instructor's discretion*. You will be informed before the final exam if you qualify.

Laboratory: Laboratory experience is an integral part of the chemistry class. You must come prepared to lab, which means you must be **on time**, have read the experiment for that week and have completed the pre-lab assignment. If a student shows up more than 20 minutes late, he/she will not be allowed to do the experiment.

Laboratory work includes the completion of a *Prelaboratory Assignment*, performance of the experiment, and a *Lab Report* which includes *Data and Observations Sheet and Post Laboratory Questions.* The prelab assignment is due at the beginning of the lab period and the lab report is due the week following completion of the experiment. Late work will be discounted 50%.

There will be a short ten-minute quiz at the beginning of each lab section. Be ready to answers questions about the experiment completed the previous week and about the experiment to be completed that week. There will be NO MAKEUP quizzes.

There will be nine experiments to be completed this term according to the attached schedule. The lowest grade of the nine will be dropped allowing the students to miss one lab without added penalty. **A minimum of seven experiments must be completed with an average score of 70% in order to obtain a passing grade in the lab.** Students may attend another lab section to make up *that week's* lab with the approval of the instructor. Even though the lab grade is 20% of the final class grade, you must have a passing grade in the lab in order to pass the class.

Lab Scoring: Each experiment is worth 20 points according to the following distribution.

Prelab Assignment	2 pts
Report: Data Sheet and Post Lab Questions	8 pts
Quiz	10 pts
Total Points per Experiment	20 pts

Grading: Grades will be determined based on the percentage of the total number of points accumulated on midterm exams, quizzes, group work, homework, term project, lab work and final exam as follows:

Midterm Exams and Quizzes 30% Homework and Group Work 15%
Term Project 15% Final Exam 20%
Lab Work 20%
Extra credit points will be added to sum of the midterm scores.

Grades will be assigned according to the following:

100 - 89.5%	A	69.4 - 63.5%	D
89.4 - 79.5 %	B	Below 63.5%	F
79.4 - 69.5 %	C		

Lecture Text- *Introduction to General, Organic and Biochemistry, 8th ed, Bettelhein*

Homework will be assigned in class or through MyPCC- please check it regularly!

Order of Chapters covered.

Chapter 1- Matter, Energy and Measurements

Chapter 2- Atoms

Chapter 4- Chemical Bonds

Chapter 5- Chemical Reactions

*Chapter 3- Nuclear Chemistry

Lab Experiments- *Online Experiments available through MY_PCC*

Date	Week	Experiment
April 5	Week #1	Lab#1- Introduction to the Lab
April 12	Week #2	SCHOOL CLOSED_ NO LAB
April 19	Week #3	Lab#3 -Density
April 26	Week #4	Lab#4 -Physical and Chemical Properties
May 3	Week #5	Lab#5 -Separation of Mixtures
May 10	Week #6	Lab#6- Atomic Spectroscopy
May 17	Week #7	Lab#7-Inorganic Nomenclature-Ionic Compounds
May 24	Week #8	Lab#8- Molecular Models
May 31	Week #9	Lab#9-Classification of Chemical Reactions
June 7	Week #10	Lab#10- Quantitative Analysis

Chemistry 104-Lecture Calendar

For YOUR use-to keep you organized!! Please fill in as we go along with textbook sections covered in class, HW due dates, quizzes, project deadlines, extra credit due, etc!

Week	Tuesday	Thursday
1	Introduction Chapter 1 Discussion Ch 1HW: 15-22,24-31,34,36,38-40,44-48,50-52,54-58,60,63-64,67,69,71,72,79 & 81.	
2	**HW CH 1 due** Project Assign#1 Due	**No Class- School Closed for Inservice**
3		
4		**Midterm Exam #1**
5		
6		
7		
8	**Midterm Exam #2**	
9		
10		
11	**Final Exam**	

GroupWork Evaluation Sheet completed by Name_____

Date:_____
Activity Description:_____

Group Members Score (0-4)

_____ _____

_____ _____

_____ _____

_____ _____

Comments- what works and what doesn't

_____

_____

_____

GroupWork Evaluation Sheet completed by Name_____

Date:_____
Activity Description:_____

Group Members Score (0-4)

_____ _____

_____ _____

_____ _____

_____ _____

Comments- what works and what doesn't

_____

_____

_____

GroupWork Evaluation Sheet completed by Name_____

Date:_____
Activity Description:_____

Group Members	Score (0-4)
_____	_____
_____	_____
_____	_____
_____	_____

Comments- what works and what doesn't

_____
_____
_____

GroupWork Evaluation Sheet completed by Name_____

Date:_____
Activity Description:_____

Group Members	Score (0-4)
_____	_____
_____	_____
_____	_____
_____	_____

Comments- what works and what doesn't

_____
_____
_____

GroupWork Evaluation Sheet completed by Name_____

Date:_____
Activity Description:_____

Group Members	Score (0-4)
_____	_____
_____	_____
_____	_____
_____	_____

Comments- what works and what doesn't

_____
_____
_____

GroupWork Evaluation Sheet completed by Name_____

Date:_____
Activity Description:_____

Group Members	Score (0-4)
_____	_____
_____	_____
_____	_____
_____	_____

Comments- what works and what doesn't

_____
_____
_____

GroupWork Evaluation Sheet completed by Name_____

Date:_____
Activity Description:_____

Group Members	Score (0-4)
_____	_____
_____	_____
_____	_____
_____	_____

Comments- what works and what doesn't

_____
_____
_____

GroupWork Evaluation Sheet completed by Name_____

Date:_____
Activity Description:_____

Group Members	Score (0-4)
_____	_____
_____	_____
_____	_____
_____	_____

Comments- what works and what doesn't

_____
_____
_____

GroupWork Evaluation Sheet completed by Name_____

Date:_____
Activity Description:_____

Group Members	Score (0-4)
_____	_____
_____	_____
_____	_____
_____	_____

Comments- what works and what doesn't

_____
_____
_____

GroupWork Evaluation Sheet completed by Name_____

Date:_____
Activity Description:_____

Group Members	Score (0-4)
_____	_____
_____	_____
_____	_____
_____	_____

Comments- what works and what doesn't

_____
_____
_____

Grading Sheets- Keep them all in the designated section of binder!!

You may cross out all the blank extra spaces at the end of the term.

Midterm Exams and Quizzes	*30%*	*Homework and Group Work*	*15%*
Term Project	*15%*	*Final Exam*	*20%*
Lab Work	*20%*		

Midterms and Quizzes- Weighted at 30% of final class grade

	Possible points	Actual points
Exam #1	100	_____
Exam #2	100	_____
Quiz #1	20	_____
Quiz #2	20	_____
Quiz #3	20	_____
Quiz #4	20	_____
Quiz #5	20	_____
Total Points:	_____	_____

Percentage of points (actual/total possible x100): _____

Weighed Exams and Quizzes grade (percentage of points x .30) =_____

Term Project- Weighted at 15% of final grade

	Possible points	Actual points	Description
Activity #1	_____	_____	_____
Activity #2	_____	_____	_____
Activity #3	_____	_____	_____
Activity #4	_____	_____	_____
Activity #5	_____	_____	_____
Activity #6	_____	_____	_____
Total Points:	_____	_____	

Percentage of points (actual/total possible x100): _____

Weighed Project grade (percentage of points x .15) =_____

Homework and Group Work- Weighted at 15% of final class grade

	Possible points	Actual points
HW#1	10	_____
HW#2	10	_____
HW#3	10	_____
HW#4	10	_____
HW#5	10	_____
HW#6	10	_____
HW#7	10	_____
HW#8	10	_____
HW#9	10	_____
HW#10	10	_____
HW#11	10	_____
Total Points:	_____	_____

Percentage of points (actual/total possible x100): _____

Weighed HW and GrWk grade (percentage of points x .15) =_____

Lab Work- Weighted at 20% of final class grade

	Possible points	Actual points
Lab#1	10	_____
Lab #2	school closed	
Lab #3	10	_____
Lab #4	10	_____
Lab #5	10	_____
Lab #6	10	_____
Lab #7	10	_____
Lab #8	10	_____
Lab #9	10	_____
Lab #10	10	_____
Total Points:	_____	_____
Minus Lowest score: 90		_____

Percentage of points (actual/total possible x100): _____

Weighed Lab grade (percentage of points x .20) =_____

Final Exam Weighted as 20% of final class grade

	Possible points	Actual points
Final Exam	200	_____

Percentage of points (actual/total possible x100): _____

Weighed Final Exam grade (percentage of points x .20) =_____

To calculate Final Class Grade Add:

_____	Weighed Exams and Quizzes grade	+
_____	Weighed Project grade	+
_____	Weighed HW and GrWk grade	+
_____	Weighed Lab grade	+
_____	Weighed Final Exam grade	=

_____ Final Class grade

Chemistry Service Learning Project
Term Project and Presentation Guidelines

This term we will work in small groups completing a service-learning project. Service learning provides the student with an opportunity to make chemistry real and relevant to their everyday lives by putting into practice the concepts learned in class through a volunteer experience. The main goals of the term project are to illustrate the relevance and application of chemistry in everyday life and to underscore the importance of civic responsibility.

Why a volunteer experience and not just an internship or job shadowing?

Sometimes we go through life and don't realize how lucky and privileged we really are. When we share our time and knowledge with other less privileged we become contributing members of society and acknowledge the *interconnectedness of all things*, which science reveals--as we give, we are the ones who really receive. In addition, doing a service activity in a chemistry class can empower you as individuals and as a chemistry student. This is the opportunity to make chemistry relevant to your life while contributing to the betterment of our community.

Service learning includes three components: the service experience, the incorporation and realization of course learning outcomes and a reflection of the activity. Along the way, I will provide you with reflection exercises that will guide you through the process. There will be opportunity for you to reflect, in writing, about your experience and how it connects to chemistry. The culmination of the project will be when students present their experience to the rest of the class the last day of school.

How to do it:

Week #2-3:

1- Get together in small groups to discuss Assignment #1 and brainstorm for ideas on how you could use chemistry to help someone in need in your community through your service-learning project, based on your personal interests. For example are you interested in elementary school education, animals, medicine, the elderly, farm workers, cultural differences, low income families, etc…. Be creative; there are no "dumb" ideas!!

2- Form groups based on common interests. Exchange contact information.

3- Become familiar with service learning at PCC. Visit PCC's Service Learning website at: http://www.pcc.edu/resources/service-learning/

4- As a group, select an agency to work with. Look into the Rock Creek service learning website: and the PCC sustainability website http://www.pcc.edu/about/sustainability/ for possible placements.

5- Contact the chosen agency and offer your help as a volunteer. Make sure you explain to the community partner what the class objectives are and what you are trying to accomplish. Most agencies will be able to help you figure what you could do to achieve your objectives. Ask them to sign the SL Agreement (contract).

Week#3

1- Turn in **Assignment #2**- Group Contract (Posted Online)

Week #4

1- Turn in a signed copy of the Service Learning Agreement between your community partner and yourself. (Form available at PCC's SL website http://www.pcc.edu/resources/service-learning/ under forms).

2- Make appointment at the Student Learning Center (Bldg 2/212) with a writing tutor to help you in the writing of your final paper.

Weeks #4-9

1- Spend a minimum of 5 hours during the quarter volunteering for the organization/agency selected. Volunteering work should be completed by **week #10**.

Week #5

1- Answer and turn in **Assignment #3**- Proposed Scope of Work (Posted Online)—complete sentences, typed or neatly hand written.

Week #5-9

1- Conduct research.

Week #8-9

1- Prepare a power point presentation for the class where you summarize your experience. Write a three-four page *group* report (**Assignment#4**-Guidelines Posted Online), summarizing your experience.

Week #10-11

1- Present your project to the rest of the class. Each group will have about 10 minutes for his or her presentation. Turn in your written report.

Please come see me if you have ANY additional questions!!

Chemistry in our Society-Service Learning Project Assignment #1:

Due Tuesday Week #2

Select a topic of everyday life that is important to you and to our society:

- Children's education
- Environment
- Drug Abuse
- Health care
- Animals
- Sustainability
- Homelessness
- *etc.*

Find a news article that relates to your selected topic and write a one-page paper on how you think chemistry can be used to address this issue. Paper must be typed, double-spaced, with times new roman, size 11 font.

On Tuesday, do a one-minute in class presentation.

Chemistry 104
C.I.Martinez
Spring 2007- Service Learning Term Project

Assignment #3: Group Contract

Group creation: Students selected an area of interest for their project. Students with the same interests will constitute a group—between 3-5 students per group (no more than 5 people per group). Groups will need to meet outside class to coordinate their activities. The e-mail and message board features in the class' website may be very useful to facilitate group discussions.

Roles: In order to keep the group working together and staying on task, roles will need to be defined. A person may have more than one role if the group is too small. In addition, other roles may be added at the group's discretion.

a. **Facilitator/timekeeper-** Will "manage" the group, make sure that everybody participates and that everyone's ideas are heard and that tasks are completed on a timely manner by each member of the group.
b. **Scribe/editor**- Will keep good records and document groups' activities, decisions, etc. Will also review all the written material that is to be turned in for clarity, punctuation and grammar. Will bring the paper to the writing center to be evaluated by a tutor.
c. **Speaker**-Will be the point of contact with instructor in regards to group's progress and concerns.
d. **Technician/ specialist**-Will perform and/or double check all the number crunching submitted by the group. Will review the data and chemical principles presented by the group and having confirmed their correctness, stands behind them. (Two people may want to share this responsibility)

Contract: The group contract is due by Wednesday of week #3 and it should be 4 pages long. It should be typed, double-spaced, using times new roman, 12 font.

It should include the following:

Page 1: Group name and role assignments
As a group, create a contract specifying the roles of each member as described above.

Page 2: Group "by-laws"
Create specific guidelines for expected participation in the group activities. How will you communicate with each other?, How often will you meet?, Where will you meet?, etc. Clearly indicate how things like attendance, commitment, effort and overall performance will be evaluated and describe consequences of below standards performance.

Page 3: Group member's evaluation form
Create a confidential group evaluation sheet to be used by each of your members at the end of the project to report to me about each member's performance.

Page 4: Signature page
This contract should be signed by all group members demonstrating their commitment to participation in this activity.

A copy of this contract should be turned in to me and another copy kept in the project binder. Contract is due **Week #3.**

Chemistry 104
Spring 2007
C.I. Martinez

Assignment #3-Service Learning Project: Proposed Scope of Work

Due week #5.

As a group, submit a typed paper answering the following questions using complete sentences. Like usual, paper should be double-spaced using Times New Roman-12pt font.

Service Experience

1. Where will your group do the service experience?
2. Will all member volunteer at the same site? Yes, no and explain.
3. What does this agency do? How does this agency impact your community?
4. Why did you choose this place?
5. Who is your contact person at the agency?
6. What will each group member do for/with them?
7. When will you be doing the service? Dates and times.
8. How many hrs does each of you pan to volunteer?

Chemistry Connection

9. Have each member of your group propose one possible "chemistry connection" related to this work.
10. As a group evaluate each possible "chemistry connection" and list the pros and cons for each one.
11. As a group, select the "chemistry connection" each of you will explore and research. You may decide on one topic for the entire group or you may decide on different topics for each member.
12. Based on your "chemistry connection" chose a question(s) your research will answer.

Chemistry 104-Spring 2007

Service Learning Term Project Completion Checklist

Due Date	Turned in			Possible Points	Points Obtained
wk#1		Assignment #1	News Article	4	
wk#3		Assignment #2	Group Contract	4	
wk#4		SL Forms	SL Agreement	4	
wk#5		Assignment #3	Proposed Scope of Work	10	
wk#10		Activity	5 Service Hours	10	
wk#10		Assignment #4	Final Paper	30	
wk#10		Assignment #5	Final Presentation	30	
wk#10		Forms	Group Members Evaluation	4	
wk#11		SL Forms	Community Partner Evaluation of You	4	
	Total Points			**100**	

Notes:
1-All assignments are available online at our website (My_PCC)
2-All SL forms are available at the PCC Service Learning website.
3-Group members' evaluation form is available at our website.

Dear Community Partner:

Thank you for allowing my student to volunteer at your organization. I hope this will be the beginning of an on-going relationship between you and us!

This Service Learning project is part of his/her requirements to complete my *Chemistry 104* class at PCC Rock Creek campus. In order to become more familiar with Service Learning, I invite you to visit out web site at: **www.spot.pcc.edu/slp** .

Below is a description of the project. Please do not hesitate to contact me if you have any questions or concerns. My contact information is in the attached contract. Again, thank you!

Objectives: The main goals of this project are to illustrate the relevance and application of chemistry in everyday life and to underscore the importance of civic responsibility.

We know that when we share our time and knowledge with others in need, whether it is people, animals or our environment, we become contributing members of our society and acknowledge the *interconnectedness of all things,* which is undeniably recognized in the latest developments in science. This is the opportunity to make chemistry relevant to each of our lives while contributing to the betterment of our community.

What is Service Learning?: Service learning is a pedagogical tool that provides the student with an opportunity to make chemistry real and relevant to their everyday lives by putting into practice the concepts learned in class through a volunteer experience. Through guided reflection activities, and individual student research, the course outcomes and the volunteer experience come together and the connection between the two is made; this is the "academic" learning part of service learning!

Project Requirements: As part of this project students must do the following:

1- Select an agency of their liking and volunteer at least **five hours** of their time in whatever capacity is agreed upon between the agency and the student. That is why they contacted you ☺.
2- Service hours must be completed, at the latest, by **June 1**.

3- Bring back to me a signed contract between them and you by **April 27**.
4- Bring back to me an evaluation form from you about their performance at your site by **June 1**.
5- Fill out an evaluation form about your site and return to me by **June 1**.
6- Complete various reflection exercises, as assigned, including research activities, which will bring together the service experience and my course outcomes (this is where the chemistry-learning happens ☺)
7- Present results of their project to the rest of the class in an oral presentation and a written final paper on the last week of class. If you would like a copy of the student's final paper just let me know.

Looking forward to working with you.

Sincerely,

Carmen I. Martinez, M.S.