**General Chemistry II Lecture Syllabus**
**Spring 2017 (CHE 1560)**
Purchase College

**Course Meeting**

Tue + Fri 10:30am-12:10pm; Wed 8:30-10:10am
Room: Humanities 1032

**Professor Information**

Dr. Elizabeth Middleton Elizabeth.Middleton@purchase.edu
Office: NS 3040 Office phone: 914-251-6692
Office hours: Tue 12:30pm-2:30pm, Wed 10:15am-11:15am, or by appointment

**Learning Assistants**

Solomon Johnson: solomon.johnson@purchase.edu
Kristopher Glover: kristopher.glover@purchase.edu

**Required Course Texts and Materials**

Chemistry: Principles and Reactions, 8th$^{th}$ edition, by Masterton and Hurley
OWLv2 subscription for homework and practice problems must be purchased in addition to the textbook. If you still have an active, 24 month OWLv2 subscription from Gen Chem I, you do not need to purchase a new subscription.

Hardcover book with OWLv2: ISBN 9781305617940
Loose leaf book with OWLv2: ISBN 9781305717480
Digital book with OWLv2: ISBN 9781305079281

Moodle: All slides and handouts (for lecture and lab) will be posted on the course Moodle site. Your grades for all assignments (except homework) will be available in the Moodle grade book. You can find the course site by logging in at moodle.purchase.edu.
Calculator: You must have a scientific or graphing calculator for this class. Your cell phone may NOT be used as a calculator during class or for quizzes and exams.
Pencils: Quizzes and exams will require number 2 pencils for filling out scantron forms.

**Prerequisites**

The prerequisites for this course are General Chemistry I and Precalculus. If you have not completed and passed both of these courses, you cannot take General Chemistry II.

General Chemistry II lab is an optional corequisite for this course. Students may take the lecture with or without the lab.

**Course Description**

Students in General Chemistry will gain knowledge and critical thinking skills to further explore their scientific interests, whether in chemistry, biology, medical fields, or other areas. But this course is more than an introduction: students will answer fundamental questions about the world around us and learn to use science in their daily lives. What are the ingredients in a can of coke? Why does road salt melt ice? How does a battery work?

The answers to these and many other questions lie in chemistry. Topics covered in General Chemistry II include acids and bases, kinetics and equilibria of chemical reactions, properties of gases and solutions, electrochemistry, and nuclear chemistry.

**Course Learning Outcomes**

Based on topics listed by the ACS Exams Institute, students will be able to:

- determine the order of a chemical reaction and calculate the rate constant from initial rates.
- perform equilibrium constant calculations for chemical reactions involving gases and for chemical reactions occurring in solution.
- write reaction mechanisms consistent with the rate law expression.
- construct pH titration curves for the titration of both monoprotic and polyprotic weak acids.
- calculate the pH of solutions containing weak acids, weak bases, salts of weak acids.
- balance oxidation-reduction equations using both the method of half-reactions and method of oxidation numbers
- solve basic stoichiometry problems involving acid-base chemical reactions.
- determine oxidation numbers of atoms in common compounds.
- apply Le Chatelier's Principle to chemical systems at equilibrium.
- calculate molar and molal concentrations of chemicals in various solutions and mixtures, and to work stoichiometric problems using afore-mentioned concentrations.
- solve thermochemical problems.
- calculate the equilibrium constant based on thermodynamic data.
- apply the laws of thermodynamics to determine whether or a chemical reaction is spontaneous under the given set of experimental conditions.
- calculate the molar mass of an unknown substance based on the colligative properties.
- compute the potential of an electrochemical cell using standard reduction potentials.
- solve numerical problems pertaining to the solubility of ionic salts in water.

**SUNY General Education Learning Outcomes (Natural Sciences)**

Students will demonstrate:

- An understanding of the methods scientists use to explore natural phenomena, including observation, hypothesis development, measurement and data collection, experimentation, evaluation of evidence, and employment of mathematical analysis; and
- The application of scientific data, concepts, and models in one of the natural sciences

**Student Disabilities**

Students with documented physical, learning, psychological and other disabilities are entitled to receive reasonable accommodations. If you need classroom or testing accommodations, please contact the Office of Disability Resources at ORD@purchase.edu or in person in the Student Services Building, Room 317A. Students must also inform the professor **at the beginning of the semester** so arrangements can be made.

**Purchase College Academic Integrity Policy**

The purchase college academic integrity policy (www.purchase.edu/policies/academicintegrity.aspx) explicitly forbids cheating, plagiarism, and other forms of academic dishonesty. Plagiarism is the appropriation or imitation of the language, ideas, and/or thoughts of another person and the representation of them as one's own original work. Students are responsible for familiarizing themselves with the definition of plagiarism and acceptable methods of attribution. The *minimum* recommended sanction for an academic integrity violation is a failing grade on the assignment.

**Students who have any questions or doubts about whether any activity is academically permissible should check with the instructor.**

**Collaboration**

You are encouraged to work with your fellow classmates when completing reading assignments, in class assignments, and studying. You may receive help from another student on the homework assignments, but copying homework answers is not allowed. In other words, identical (or nearly identical) assignments cannot be submitted. Collaboration of any type is not permitted on quizzes or exams. All submitted assignments must represent the unique and individual work of each student. If you have any questions regarding this policy, please speak to Prof. Middleton.

**Communication**

The best way to get in touch with me is by stopping by my office hours or by email. I will respond to emails promptly during regular business hours. You can also call my office phone. You are always welcome at office hours without an appointment or can **set up an appointment** to meet at another time.

I expect you to **check your Purchase email daily** and the class Moodle site regularly for information or updates about the course. I also ask that you treat emails with me as professional communication. Please write in complete sentences, use capitalization, and use correct grammar.

**Course Assignments**

**1) Homework (20%)**

- Homework assignments will be completed through OWLv2 for each chapter covered this semester.
- There will be approximately 9-10 required homework assignments throughout the semester, as well as many optional, ungraded assignments for review or practice.
- Exact due dates will be available on OWLv2.
- You may work with other students to complete the homework but you may not copy answers from another student who has already completed the assignment.

**2) Quizzes (25%)**

- Quizzes (roughly 6-8 throughout the semester) will test students' knowledge and application of the material covered in class and in the assigned readings.
- Quizzes will be multiple choice, contain ~4-8 questions, and typically cover one chapter.
- Quizzes will be given at the beginning of class, after which we will cover new material. If you arrive to class late, you will not receive extra time to complete the quiz.

**3) Midterm Exams (35%)**

- Midterms (three throughout the semester) will test students' knowledge and application of the material covered in class and in the assigned readings.
- Midterms will be multiple choice, contain ~15-25 questions, and typically cover ~3 chapters.
- You will have the entire class period to complete midterms. If you arrive to class late, you will not receive extra time to complete the midterm.

**4) Final Exam (20%)**

- This course will have one cumulative, multiple choice final exam at the end of the course (the second semester ACS general chemistry exam). It will cover primarily second semester material.
- You should not make plans to leave at the end of the semester before the final exam date.

**Attendance**

Attendance in this course is **not required**, but is **highly recommended**. We will be covering material from a large number of chapters in the textbook, so coming to class is the best way to focus on the material will be covered on the homework, quizzes, and exams. I will take attendance in class for my own records, but this will not factor into your grade. It is therefore not necessary to alert me when you will miss class unless there will be a conflict with a quiz, exam, or other in class assignment. If you do miss class, it is your responsibility to contact a classmate and find out what you missed, including content covered and any announcements.

**Classroom Expectations**

- Please be on time, listen actively, and participate in class discussions and activities
- Ask a question if you don't understand something! But please do not engage in side conversations during class, even regarding the course, since they are distracting to me and your fellow classmates
- You must turn off cell phones, iPods, and other electronic devices during class
- Recording devices of any kind are not permitted in class
- Laptops or tablets may be used only for accessing the textbook, slides, or other course materials. If you check email, chat, shop, etc. you will lose this privilege
- In order to avoid disrupting the class, please arrive on time, stay until the end of class, and minimize times that you need to leave to use the restroom
- Make sure the area around your seat is clean at the end of each class

**Policy for missed quizzes and exams**

Attendance is required on days when quizzes or exams are offered. If you have a conflict with a quiz or exam date, you must alert me in writing (email is best) two weeks in advance to discuss alternate arrangements. I generally require that these students take the quiz or exam before the rest of the class. In case of a medical or other emergency, you must alert me immediately about the issue. Whether your absence is planned or due to an emergency, you must provide documentation (doctor's note, flight confirmation, interview invitation, etc.) before you will be able to schedule a make-up assignment. Make-up quizzes and exams are not permitted after the fact except in the case of a documented emergency.

**Extra Credit**

There will be opportunities for extra credit throughout the course as part of the homework, quizzes, and exams. You should take advantage of these extra credit assignments when they come up, as **there will not be additional extra credit available at the end of the semester**. Extra credit for one type of assignment (for example, homework) cannot be applied to another assignment (for example, exams) and your grade for any type of assignment cannot go above 100% at the end of the semester.

**Course Content**

We will cover content from Chapters 9-18 during the semester, though we will not cover all content in each chapter. The full schedule for the semester, including estimated dates for covering each chapter, quiz and exam dates, and other important information, is found on the course Moodle site. All dates are subject to change at the discretion of the professor, so be sure to check Moodle frequently for the most up-to-date information.

**Final Grades**

| Highest | Lowest | Letter Grade |
|---|---|---|
| 100 | 93 | A |
| 92.99 | 90 | A- |
| 89.99 | 87 | B+ |
| 86.99 | 83 | B |
| 82.99 | 80 | B- |
| 79.99 | 77 | C+ |
| 76.99 | 73 | C |
| 72.99 | 70 | C- |
| 69.99 | 60 | D |
| 59.99 | 0 | F |

A grade of A+ will be given at the discretion of the professor for exceptional work in the course

Purchase College does not award grades of D+ or D-