General Chemistry II Lecture Syllabus
Spring 2019 (CHE 1560)
Purchase College

Course Meeting

Tue + Fri 10:30am-12:10pm; Wed 8:30-9:40am
Room: Social Sciences 1001

Professor Information

Dr. Elizabeth Middleton Elizabeth.Middleton@purchase.edu
Office: NS 3040 Office phone: 914-251-6692
Office hours: Tue 12:15pm-1:15pm, Wed 9:45-11:45am, or by appointment

Required Texts

Chemistry: Atoms First, published by OpenStax
Available for free online at https://openstax.org/details/books/chemistry-atoms-first
Also available in hardcover or paperback from Amazon or the campus bookstore.

Other Course Materials

Moodle: Many important resources will be posted on the course Moodle site, including PowerPoints, worksheets, recorded slides, and schedules. Your grades for all assignments will be available in the Moodle grade book. You can find our course website 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 for quizzes and exams. For the final exam ONLY, you may use a scientific but NOT a graphing calculator.

Pencils: Quizzes and exams will require number 2 pencils for filling out scantron forms.

Optional: ACS General Chemistry Study Guide, 2nd edition
Available from the ACS exams institute: https://uwm.edu/acs-exams/students/student-study-materials/study-guide-books/

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. Why does road salt melt ice? How do batteries work? What are the ingredients in Pepsi?

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 ODR@purchase.edu or in person in the Student Services Building, Room 316A. 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 (https://www.purchase.edu/offices/community-standards/student-code-of-conduct/section-a-academic-integrity/index.php) 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 classmates when completing reading assignments, in class assignments, worksheets, and other forms of studying. Explaining concepts to others is an excellent way of enhancing your own understanding. However, collaboration of any type is not permitted on quizzes or exams. 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) Quizzes (35%)

- This course will have periodic quizzes that will cover roughly 1-2 chapters.
- There will also be 1-2 quiz questions given at the beginning of class each Tuesday. These questions will be pooled and count for one additional "Tuesday quiz," to encourage you to stay on top of the material, do homework questions regularly, and attend class. If you get half of the Tuesday questions correct during the semester, you earn 100% on this quiz.
- Quizzes will be given at the beginning of class and last approximately 30 minutes. Late arrival on quiz days will result in less time to complete the quiz or a zero if the quiz is over.
- You may drop your lowest quiz grade of the semester—either a scheduled quiz or the aggregate "Tuesday quiz."
- **Conflicts for scheduled quizzes must be discussed with Prof. Middleton at least two weeks in advance.** There are no make-ups for "Tuesday quiz" questions—NO EXCEPTIONS.

2) Midterm Exams (40%)

- This course will have three exams that will each cover roughly 6 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.
- **Conflicts for exams must be discussed with Prof. Middleton at least two weeks in advance.**

3) Final Exam (25%)

- 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.

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 and 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.

Ungraded Assignments

There will be many ungraded assignments and activities throughout this course. These include homework from the book, assigned readings, recorded slides, worksheets, and individual and group work during class. While these will not directly impact your grade, they are designed to help you engage with the material in order to better learn and apply it. When in class, I expect you to fully participate in these activities, and you will be tested on the content of ungraded assignments on quizzes or exams.

Attendance

Attendance in this course is not required (except on quiz/exam days), but is highly recommended. We will be covering large quantities of content, so coming to class is an important opportunity to learn the material and ask questions. I will take attendance 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 or exam. If you do miss class, it is your responsibility to learn what you missed by contacting a classmate and/or consulting the many resources available to you on Moodle (including recorded lecture slides from class).

Classroom Expectations

- Please be on time, listen actively, and participate in class discussions and activities.
- Come to class prepared—complete the assigned readings, recordings, and worksheets before class.
- Turn off or silence cell phones at the beginning of class.
- Laptops, tablets, etc. may be used during class only for activities relevant for the class, such as looking at the online textbook, periodic table, or lecture slides; taking notes; or looking up an unknown term. Unauthorized use, including checking email, shopping, gaming, etc. is not permitted and will result in loss of this privilege.
- Recording devices of any kind are not permitted in class; however, I will record the slides and audio each class and post them online for your convenience.
- 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.

Extra Credit

There will be opportunities for extra credit throughout the course as part of the quizzes and exams. You should take advantage of these extra credit questions 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, quizzes) 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 and Schedule

We will cover content from Chapters 10-17 and 20 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-