

George Mason University
Department of Chemistry and Biochemistry
General Chemistry II (Chem 212) Syllabus

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Textbook: Silberberg, CHEMISTRY, The Molecular Nature of Matter and Change, 7th. Ed, Vol. II, George Mason University, 2015 (CHEM 212).

General Remarks:

This is the second semester of a two-semester course sequence in freshman chemistry for science majors. Chem 211 is a prerequisite for this course so a student registered for Chem 212 must have obtained a minimum grade of “C” in Chem 211. Although you have already been told most of the following points, I think that they are important enough to be re-emphasized. A serious student will read the textbook and work problems at the end of each chapter – spending at least ten hours per week on these. Problem solving is a very important part of learning in any science course. If a student intends to pass this course, (s)he will spend a lot of time solving problems at the end of each chapter. The serious student will also work all of these with the goal of trying to understand the intent of each problem. The student should be prepared to work problems on the board. Participation by working problems on the board will be noted and can help you when final grades are to be given. When the student finds that (s)he cannot work certain problems or understand certain concepts, the student is urged to contact me during office hours or schedule an appointment to meet with me. Since the role of the instructor is to *assist* the student in the learning process, please make sure that you have read and attempted the problems before coming for assistance. You should purchase a spiral bound notebook and work all problems in it.

If you are unable to attend office hours due to time conflicts, make sure you attend posted office hours of your lab instructor or another Graduate Teaching Assistant (GTA). An additional aid provided by the Chemistry Department is the tutoring center (basement level of Planetary Hall), which is open during the week and staffed by students who have been successful in the subject matter. Students enrolled in CHEM 212 are not required to pay additional costs to utilize the resources provided by the tutoring center; this is a cost free aid provided to students enrolled in the General Chemistry courses. Periodically [announcements](#) concerning the tutoring center and all General Chem sections will be posted electronically.

Students are expected to attend the class periods of the courses for which they are registered. In-class participation is important not only to the individual student, but also to the class as a whole. Because class

participation may be a factor in grading, instructors may use absence, tardiness, or early departure as de facto evidence of nonparticipation. Taking attendance will be started on the first day of class and considered as a means to identify those students who intend to take the course from those who do not **(students not present when the roll is called will be dropped from the class---lecture and lab simultaneously).**

Absence from classes or exams for Religious Observances or Participation in University Activities does not relieve you from responsibility for any part of the course work required during the absence. It is your obligation to provide your instructor, within the first two weeks of the semester, with the dates of major religious holidays on which you will be absent, and the dates for which you are requesting an excused absence for participation in any university-sponsored activity scheduled prior to the start of the semester, and as soon as possible otherwise. If you are requesting an excused absence for participation in a university-sponsored activity, you must provide your instructor with a letter from a university official stating the dates and times that participation in the activity would result in the student missing class.

The most successful student will make use of the many learning aids in addition to lecture. Such person will discuss difficulties with fellow students, will read the reference books, will work problems at the end of the chapter and be active in class- asking and answering questions. The student must take responsibility for the learning process and work at finding every possible way to learn the concepts. The lecture is nothing more than a learning aid and does not control how much you learn – you do. Instead, it is the instructor's duty to clarify concepts that students do not understand and to provide a fair way to evaluate the student's progress. The course is outlined in the lecture syllabus. Anything in those chapters may be on the tests.

Successful Studying Strategy

A student, who really wants successfully complete this course should design a well-thought out studying strategy. This should include reading the chapters, studying worked problems, and working other problems at the end of the chapter prior to finishing the homework, quizzes or exams. If you are concerned that your problem solving skills are not satisfactory, consider studying the concepts of proportionality discussed at: <http://genchem.cos.gmu.edu/tutorials/default.htm>. More specifically try the following:

- Spend about a half-hour skimming the contents of the chapter to familiarize yourself with very general concepts.
- Read the chapter through completely, but do not spend much time working problems.
- Study how the worked problems are solved.
- Work problems at the end of the chapter until you can solve most of the ones you encounter. Make sure you focus on concepts. You should go back to the section from which the problem is derived and look at worked problems to help learn how to solve these.
- Work the homework problems.
- Ask for help from the tutors at the tutoring center, which is next door to the testing center. Ask for help from the LA. Ask for help from the instructor. Hours for the tutoring center will be available through the genchem web page.

Grading

Midterm and Final Examinations:

- The final grade in this course will be based on a percentage of points earned relative to total possible points. Listed below is the tentative point distribution for examinations, quizzes/homework and assignment grades. However, **an absolute grading scale cannot be determined until all scores have been compiled and evaluated.** In order to optimize your overall performance, use the following scale as a rule of thumb, keeping in mind that the scale is subject to change during the course of the semester: 100-90% (A); 89-80% (B); 79-70% (C); <69% (D or F). **DO NOT RELY UPON A "CURVE"; MAXIMIZE YOUR OVERALL PERFORMANCE IRRESPECTIVE OF A "CURVE"**
- True letter grades cannot be assigned to exams during the course of the semester because students at the bottom tend to drop or withdraw from the class, thereby resulting in a shift of the average for the exam. Students that withdrew from the course, as well as those that stopped attending, will not be considered in the calculation of the overall average for the course at the end of the semester.
- Extra credit work and/or assignments will not be entertained at the end of the semester because students failed to properly manage their time.
- If you think you will miss either the midterm or final exam for **Religious Observances** or **Participation in University Activities**, you have to remind your instructor a week before the exam for arranging the make up exam for you although you have submitted the dates of such events at the beginning of the semester.

Midterm Exams (3)	45%
Quizzes & Homework	30%
Final Exam	25%
Total	100%

- A valid GMU ID is required for all exams. Other forms of ID will not be accepted. GMU ID cards that do not clearly show the face and identification number will not be accepted.

Midterm Examinations

- Midterm examinations are either computerized (taken in the testing center) or paper based. For each exam, there are about 20 questions and 80 minutes are allotted to complete the exam. Students are responsible for bringing their own calculator (**non programmable**) for examinations. CALCULATOR SHARING WILL NOT BE ALLOWED DURING TESTING PERIODS. Small computers are also not allowed during examination periods. Use of such will be considered as an **honor code violation** and dealt with accordingly.

Final Exam

- The **final exam** is a **cumulative** exam and nationally standardized examination produced by the American Chemical Society (ACS). ACS study guides for the final exam can be purchased from the GMU Bookstore or ordered online from the ACS. All exam scores will be used in determining the final grade. A student, who finds it necessary to miss an examination, **must** notify me as soon as possible before or **immediately after** the examination and bring in **documented proof** of the problem. Otherwise the student will receive a zero for the missed examination.
- Cell phones must be turned off and stored in backpacks BEFORE the exams begin. If a student is seen using cell phone either for communication or for calculation during an exam, the student will receive an automatic "F" for the exam, since this is an honor code violation and the matter referred to the [Office of Academic Integrity](#). The recommendation will be for the student to receive a grade of "F" for the entire course. Keep in mind at all times that GMU is an Honor Code university.
- Any form of cheating during the exam period will result in an automatic "F" for the course.
- The standard recommendation for honor code violations will be prosecution to the fullest extent.
- Recommendations regarding honor code violations (HCV) on midterm exams.....first time offenders---a grade of "F" for that exam; repeat offenders--a grade of "F" for the course and suspension/expulsion from George Mason University.
- Recommendations regarding honor code violations (HCV) on the final exam.....first time offenders---a grade of "F" for the course and suspension/expulsion from George Mason University.
- The final examination can only be rescheduled by the COS Assistant Dean.

Quizzes:

- **On-line quizzes** will be administered during the semester using CONNECT. Computer generated quizzes will be taken by logging in to the CONNECT program using your **CONNECT CODE**. The codes should be purchased, if you did not purchase one when the textbook was purchased, prior to the first meeting of lecture. Deadlines will be posted on the Blackboard. Follow these steps to register:
 - Log into Blackboard
 - Select the course (Chem 212)
 - Click on Assignment
 - Click on one of the Homeworks
 - Enter your purchased **CONNECT CODE** and complete your registration following the steps.

Note: You **MUST** use your GMU email account to complete the CONNECT registration.

- **In-class quizzes** might be given sporadically without announcement to encourage class attendance. Such quizzes are intended to benefit students who attend class regularly.

Homework:

- The problems at the end of the chapters are provided *for your benefit* in order to develop critical problem solving skills necessary in this course. Do not quit after working the easier problems. The more challenging problems incorporate several concepts and will better prepare you for quizzes and exams. Selected problems will be worked in class on a "time permitting basis." Do not get discouraged and spend excessive amounts of time on a single problem. Move on to those you can solve and budget your time wisely.
- **Homeworks** will be taken by logging into the **CONNECT** program using your **CONNECT CODE**. The codes should be purchased, if you did not purchase one when the textbook was purchased, prior to the first meeting of lecture. Deadlines will be posted on the Blackboard.
- Once you have registered as a **SINGLE** (one-time log in) option, log into **Blackboard** to access your HWs.
- **Dates to be remembered:** For important dates to be remembered refer to the link below.
<http://registrar.gmu.edu/calendars/fall-2016/>

Tentative Lecture Schedule

Week #	Chapter	Topic
1	13	Properties of Mixtures
2	13	Properties of Mixtures
3	16	Kinetics
4	16	Kinetics
5	17	Chemical equilibrium
	Exam I	Chapter 13, 16, and 17 (Testing Center)
6	18	Acid-base Equilibria
7	18	Acid-base Equilibria
8	18	Acid-Base Equilibrium
9	19	Ionic Equilibrium in Aqueous solution
10	19	Ionic Equilibrium in Aqueous solution
	Exam II	Chapter 18 and 19 (Testing Center)
11	12	Intermolecular Forces, solid and liquid phases
12	12	Intermolecular Forces, solid and liquid phases
13	20	Thermodynamics
14	21	Electrochemistry
	Exam III	Chap. 19, 12, 20, 21 (Testing Center)
15	24	Nuclear Chemistry
16	24	Nuclear Chemistry