

<b>CHM 2045</b>	<b>General Chemistry</b> Gower Sections	<b>Spring 2012</b>
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**INSTRUCTOR:** Jeff Gower ([jgower@ufl.edu](mailto:jgower@ufl.edu))

Lectures: MWR 10th Per.; MWR 11th Per.. (CLB 130)

Office hours: MWF 4<sup>th</sup> and 6<sup>th</sup> Periods; R 7<sup>th</sup> and 8<sup>th</sup> Periods in CLB 314

**TEXTBOOK:** Principles of General Chemistry, 2<sup>nd</sup> Edition, Martin S. Silberberg,  
McGraw-Hill – [You'll also need a spiral bound self-assessment notebook](#)

**PREREQUISITES:** Passing score on the Chemistry Readiness Assessment (6 or higher on each portion, math and chemistry) OR Grade of C or higher in CHM 1025 OR Score of 3 or higher on the AP Chemistry Exam OR Score of 4 or higher on the IB Chemistry Exam **PLUS** MAC 1140 OR MAC 1147 OR MAC 2311. Students may take the MAC prereq concurrently with CHM 2045, **but the MAC requirement MUST be met prior to taking CHM 2046.**

#### COURSE SCHEDULE (lecture schedule is tentative)

Dates	Topics (# of lectures)	Chapters
Jan. 9–12	Introduction and Review: Atoms, Molecules, and Ions (3)	Chap. 1–2
<b>Wednesday, Jan. 18</b>	<b>Online Assessment Quiz #1</b>	<b>Syllabus</b>
Jan. 18–23	Mass Relations and Stoichiometry (3)	Chap. 3
<b>Wednesday, Jan. 25</b>	<b>Online Assessment Quiz #2</b>	<b>Chaps. 1–3</b>
Jan. 25–30	Aqueous Reactions (3)	Chap. 4
Feb. 1–5	Enthalpy & Calorimetry (3)	Chap. 6
<b>Tuesday, Feb. 7 (8:20-10:20 pm)</b>	<b>Progress Exam 1</b>	<b>Chaps. 1–4, 6</b>
Feb. 9–13	Atomic Structure (2)	Chap. 7
Feb. 15–22	Electron Configuration and Periodic Trends (4)	Chap. 8
<b>Wednesday, Feb. 22</b>	<b>Online Assessment Quiz #3</b>	<b>Chaps. 7–8</b>
Feb. 23–29	Chemical Bonding Models (3)	Chap. 9
<b>Thursday, Mar. 1 (8:20-10:20 pm)</b>	<b>Progress Exam 2</b>	<b>Chaps. 1–4, 6–9</b>
Mar. 12–14	Molecular Geometry (2)	Chap. 10
Mar. 15–21	Covalent Bonding Theories (3)	Chap. 11
<b>Wednesday, Mar. 21</b>	<b>Online Assessment Quiz #4</b>	<b>Chaps. 10–11</b>
Mar. 22–28	Gases (3)	Chap. 5
Mar. 29 – Apr. 4	Intermolecular Forces and Liquids and Solids (3)	Chap. 12
<b>Monday, Apr. 9 (8:20-10:20 pm)</b>	<b>Progress Exam 3</b>	<b>Chaps. 1–12</b>
Apr. 11–18	Solutions (4)	Chap. 13
<b>Wednesday, Apr. 18</b>	<b>Online Assessment Quiz #5</b>	<b>Chap. 13</b>
Apr. 19–25	Chemical Kinetics (3)	Chap. 16
<b>Saturday, Apr. 28 (5:30–7:30pm)</b>	<b>Final Exam</b>	Cumulative

**HOLIDAYS (no classes):** January 16 (MLK,Jr. Day); March 5–9 (Spring Break)

**SAKAI (CLASS WEB SITE):** Here you will find the syllabus, a link to the WebAssign homework site, your gradebook for the class, selected lecture material, videos, files, end-of-chapter problem solutions, class announcements, and other pertinent info for the course. It is your responsibility to check the Class Web Site often (as well as your gradebook) to make sure that you do not miss important announcements and other information and to ensure that your gradebook is accurate. To access Sakai, go:

<http://lss.at.ufl.edu>. To log in, you must use your GatorLink username and password. If you do not yet have one, you must obtain one. If you change your GatorLink username during the semester, you MUST inform your instructors – otherwise your WebAssign scores will not transfer accurately! If you have any problems with your GatorLink name or password, you should either go on-line <http://www.gatorlink.ufl.edu>, contact the Help Desk at 392-HELP, or go to 520 CSE for personal assistance. For other computer assistance, visit <http://helpdesk.ufl.edu/>.

**LECTURE ATTENDANCE AND ETIQUETTE:** Students should attend each assigned lecture, but attendance is not monitored. Do as you see fit. Keep in mind that although you may decide to not attend your assigned lecture, or to attend a different lecture, you are nevertheless responsible for everything that is said in your assigned lecture. No excuses, no exceptions. What another instructor says or doesn't say, does or doesn't do, has no bearing on you. I will abide by the policies of the course as outlined in this syllabus. In this day of instant-communication (and miscommunication), rumors run rampant and at rapid pace. Keep that in mind, and do not allow yourself to be swayed by rumors. If you are interested in accuracy about lecture/exam/quiz information, just read the syllabus, keep up with Sakai, and attend the lectures for which you are assigned.

Be in class on time. If you arrive late, enter in the REAR of the hall, NOT the front of the hall. If possible, please keep the last row of the hall reserved for students who need to leave lecture early. Do not leave from mid-rows or mid-hall, and only leave through rear doors and not front doors, unless for emergency. When the instructor is speaking, DO NOT SPEAK, PERIOD! It bothers your fellow students. Failure to keep quiet during lecture will result in your being told to leave the hall.

**DISCUSSION CLASSES:** The Discussion Classes meet every week (except for the first week of the semester) according to the schedule linked below. As with lectures, your attendance in Discussion classes is not monitored, but it is highly recommended that you take advantage of this opportunity to have a structured problem-solving sessions and conceptual discussion with graduate chemistry TAs. You may go to as many Discussion Classes that you would like to attend, so long as space is available - should space become an issue, the TAs will have to take steps to ensure that assigned students get priority seating. <http://www.chem.ufl.edu/generalchemistry/teachingassign.shtml>

#### **CONTACTING THE LECTURE INSTRUCTOR / OFFICE HOUR POLICY:**

Emails are for administrative purposes only (requests about policies or information that is not given in the syllabus or was not mentioned in lecture), and not for distance-instruction (my experience has shown that it is very difficult to teach via email). All email queries about information covered in the syllabus or announced in lecture will be disregarded and unanswered. All academic inquiries must be made during office hours or before/after lectures (if time permits). Please consult the online chapter solutions for the problem (if available) before coming to office hours.

**CHEMISTRY LEARNING CENTER (CLC):** There is free help to be had from graduate student teaching assistants in the CLC Monday through Friday 2<sup>nd</sup> through 11<sup>th</sup> periods in Flint Hall 257-258. Your discussion TA will have office hours in the CLC, but you may go there anytime any TA is assigned there to get help on questions pertaining to chemistry. A schedule of the TA schedules will be posted in the corridor outside the CLC and also on our E-Learning Class Web Site and here at

<http://www.chem.ufl.edu/generalchemistry/CLCofficehours.shtml>

And, there is the **TEACHING CENTER** located on the ground floor of Broward Hall, if you'd like to use that resource. Their web site is <http://www.teachingcenter.ufl.edu>.

**HOW TO SUCCEED IN COLLEGE CHEMISTRY:** Success in college-level chemistry requires both a strong conceptual understanding of the material and a competent proficiency with the quantitative problem-solving strategies that are required to successfully answer word problems that are typical on quizzes and exams. You will **not** excel in this course without both the conceptual and the competence aspects of the material. This means that you **MUST PRACTICE** most (if not all) of the End-Of-Chapter problems in your textbook (see Problem-Solving Strategy below) so that you can diagnose your own strengths and weaknesses with the material. (Do not make the common mistake of thinking that the WebAssign problems alone constitute enough practice). Then, you can study with focus and efficiency to tackle and overcome the weaknesses in your competence with the material. The more practice with problems that you do, the more likely you will recognize and know how to approach and work through the same kinds of problems (with the fewest errors and avoidable missteps) that you will see on quizzes and exams. FOCUSED AND EFFICIENT PRACTICE IS ESSENTIAL – FOLLOW CAREFULLY THE STRATEGY BELOW!!!

**Problem-Solving Practice Strategy (VERY important!!):**

1) attempt each of the end-of-chapter problems one at a time; 2) consult the worked-out solutions (in Sakai) after attempting each problem to see if you got the correct answer (anything less than the absolute correct answer is an incorrect answer!) – if you didn't get the absolute correct answer the first time without looking at the solution, read over the solution carefully and try to understand where you made the error; 3) if you succeeded in getting the correct answer the first time without looking at the solution, check off that problem in the book, and if you did not succeed in getting the correct answer the first time without looking at the solution, circle the problem number; 4) revisit the circled problems the next day or a few days later to see if you get the correct answer without looking at the solution; 5) repeat step 3); and 6) repeat step 4) if necessary. Never assume that you have understood or succeeded at a problem until you have obtained the **CORRECT** answer (the answer in **BOLD** in the solutions) all on your own without looking at the solution first to do so, and do not merely look at the solutions and say "oh yeah, I see what I did wrong", and move on. **ALWAYS** go back and be sure that you can do each problem on your own successfully. Otherwise, you will most likely make the same errors on exams. Be sure to take **NOTES** as you do problems, indicating your weaknesses and strengths and where you made specific mistakes, so that you will be able to be on the lookout for when these types of situations arise in the future! And this is the most important thing of all: ALWAYS be assessing yourself – at the end of every problem-practice session, count the number of problems you did correctly the FIRST time without looking at the solution, and the number you did not do correctly the first time – the percentage of problems you did correctly will be your “grade” for that session, which is a very good approximation of your performance level – ALWAYS BE ASSESSING YOURSELF, AND DO NOT WAIT UNTIL YOUR INSTRUCTORS ASSESS YOU ON EXAMS, AFTER WHICH IT IS TOO LATE TO DO ANYTHING ABOUT IT. Merely "doing all the problems at the end of the chapters" does not equal "doing all the problems at the end of the chapters correctly". **HARD WORK DOES NOT NECESSARILY EQUAL PRODUCTIVE WORK!!** Do not make this very very common mistake. Giving yourself a "grade" after each session will keep you mentally on track regarding how you are performing at that time – without this information, you **WILL NOT** have any real idea of how well you are doing and how well you are prepared for exams.

**Note about using “old exams”:** The old exams that are posted are for you to use in a self-imposed exam-like setting (quiet room, with clock set to 2 hours, with no interruptions, with only a calculator and pencil and paper in hand). Do NOT look at the solutions at any time during the exams. Then grade your exam at the end, using the solutions then and only then. Merely using the exams as practice problems (using the solutions as you go along, similar to the way you'd do end-of-chapter problems) is defeating their purpose and WILL result in a FALSE sense of your exam-taking ability with the material. **EACH SEMESTER** we instructors hear the same thing from students: "The exams we had to take were much harder than the “old exams” you posted." This is proven to be not true each semester. The average exam scores on the old exams are, within only a few percentage points, the **EXACT** same as the average exam scores on each semester's exams. The difference is that when you use an old exam, you

are not in the same real-life exam setting as when you take your actual exams. This is a very significant difference. So, if you choose to use the old exams as practice problems, that is fine, but understand that your performance on them is not necessarily reflective of how prepared you are for the real-exam setting you'll find yourself in during the semester.

**Final Note:** One of the most important things that you should learn while in college is that you must learn to teach yourself and not rely on others to teach you. You can gain help from others in the form of guidance and clarification, but you must learn to identify your own weaknesses and strengths with the material in your courses, and learn to efficiently work on those weaknesses with focus and honest self-assessment so that you will be able to prove yourself when the instructor assesses you on exams. It is your goal as a college student to learn to take responsibility for your own success or lack thereof, to utilize the experience and knowledge of instructors and fellow students without overly relying on such assistance, to avoid the temptation to blame others for your failures, and to develop the strength of character and self-reliance that will be required of you as a productive adult.

**EXAMS:** Three progress exams and a cumulative final exam will be given.

**No graphing or programmable calculators are allowed during exams!** You must use a non-graphing non-programmable scientific calculator on exams (with log, ln, root, and exponent (scientific notation) functions). Be sure to also bring pencils, section number, and your UF ID card. No notes, information sheets, or cell phones allowed.

**No makeup progress exams will be given for ANY reason.** Since unavoidable situations (illnesses, accidents, emergencies, etc.) do arise occasionally, we've incorporated a dropped-exam policy (the best 2 of 3 progress exams will be counted toward your grade - see under "GRADES" below). If you must be absent for an exam due to a **documented and approved academic or UF athletic conflict**, bring the documentation to your instructor **beforehand** (at least a week prior to the scheduled exam). Planned or emergency trips home or elsewhere are not approved conflicts.

**Student bubbling errors on exam scantrons are not negotiated, and a penalty of nine (9) points will be applied to any exam scantron that has to be tracked down and identified due to incorrect student identity bubbling.**

**Checking your Scantron:** Out of the tens of thousands of exam scantrons that have been scored while I've been at UF, not one has been scored incorrectly. Any discrepancies have always been due to student bubbling error. So checking your scantron has been repeatedly proven to be an exercise in futility. However, scantrons may be checked during the TWO established instructor office hour sessions following the posting of the exam score in your Sakai gradebook, after which no further scantron checking will be accommodated.

**ONLINE ASSESSMENT QUIZZES:** There will be five (5) online assessment quizzes given via the Sakai web site for this course. To access the assessment quizzes, click on "Assessments" in Sakai. **The quizzes are scheduled as indicated above in the course schedule.** The quizzes will be opened for you to take them on the days listed, and the time period you'll be able to take the quiz is anytime during the 24-hour period that defines that particular day. **No makeup quizzes will be given for ANY reason.** Computer issues that may arise will not be negotiated. To accommodate unavoidable conflicts or computer issues that may arise, we offer a dropped-quiz policy (the best 4 of 5 quizzes counting toward your grade – see under "GRADES" below). It is suggested that you do the assessments early enough in the day to avoid last-minute time or computer issues. If you must be absent for a quiz due to a **documented and approved academic or UF athletic conflict**, bring the documentation to your instructor **beforehand** (at least a week prior to the scheduled quiz). Planned or emergency trips home or elsewhere are not approved conflicts.

**HONOR CODE:** The [UF Student Honor Code](#) (ctrl+click to open link) applies to all exams and assessments given in this course. Please understand that absolutely NO leniency will be extended in any case of academic dishonesty.

**WEBASSIGN (ON-LINE) HOMEWORK:** WebAssign assignments for each textbook chapter will be due on the dates listed in WebAssign – due times for each due date are just before midnight - it is up to students to be aware of WebAssign due dates. Do NOT wait until the last minute to attempt to complete WebAssign assignments, because computer issues can arise at any time, and you don't want to be left at the last minute not being able to complete your assignments on time due to some technical error. To access WebAssign, go to <https://www.webassign.net/login.html> and use the following:

username = your GatorLink username

institution = ufl

password = 2045 (**if you already have a WebAssign password, use it instead**)

If you do not already have WebAssign Access, you'll have to buy the access **from the web site** (around \$35 for the semester) - **no WebAssign access can be purchased from information or codes obtained from a textbook; you must purchase the access online**. You'll have 7-10 days of WebAssign usage once you access the site using the class-provided login information, after which you'll have to have a purchased access. **Do not allow your previous WebAssign account to expire during the semester or you will lose all of your work!**

Correct answers to WebAssign assignments require **very precise attention to significant-figure rules** – if you do not **fully** understand the usage of significant figures, you should read pages 20-24 in your Silberberg textbook (or another source for detailed significant-figure instruction). Also, the correct answers to WebAssign assignments have very narrow acceptance windows – you must be very careful in the numbers you use for calculations and how you carry them through the problem-solving procedure. You'll have three (3) attempts for each problem question. Finally, you'll notice that many of the WebAssign problems have information next to the problem number (some of which refers to Silberberg Follow-Up or End-Of-Chapter Problem such-and-such, so that you can consult the Silberberg textbook problem and/or the posted online solutions to find out how the problem is solved if you have any difficulties). The WebAssign User Guide is at [http://www.webassign.net/manual/WebAssign\\_Student\\_Guide.pdf](http://www.webassign.net/manual/WebAssign_Student_Guide.pdf) and the WebAssign Student Technical Support is at [http://www.webassign.net/user\\_support/student/](http://www.webassign.net/user_support/student/)

**Do not email instructors about WebAssign problems - if you need help, come to office hours or the CLC for help - be sure to have the problem printed out in full and show what work you've done. Again, pay extra careful attention to significant figure rules because WebAssign is not tolerant of incorrect sig figs.**

**GRADES:** Grades for the term will be determined as follows:

Progress Exams (best 2 of 3 @ 250 pts)	500 pts
WebAssign (On-line) Assignments	80 pts
Online Assessment Quizzes (best 4 of 5 @ 30 pts)	120 pts
Final Exam	300 pts
<b>TOTAL</b>	<b>1000 pts</b>

The following grade cutoffs will be used (these are non-negotiable):

900-1000 = A    860-899 = A-    830-859 = B+    800-829 = B    760-799 = B-  
730-759 = C+    700-729 = C    660-699 = C-    630-659 = D+    600-629 = D  
< 600 = E (a grade of C or higher is required to take CHM2046; a C- does not count)

NOTE: No quiz or exam scores are "dropped" until AFTER the last day of classes. Do not think in terms of "I will drop this-or-that exam or quiz" until then, because you never know when an unavoidable situation will arise that will result in your missing another exam or quiz. Also, do not make the very common mistake of thinking "I have an A going into the Final Exam" if that "A" is due to a "dropped" exam or quiz score – think instead in terms of your PERFORMANCE level going into the Final Exam, which is reflected in ALL of your exam and quiz scores (including those that you think will be "dropped"). You will likely perform on the Final Exam at the level reflected by ALL of your scores unless you go back and address any deficiencies reflected in so-called "dropped" exams first.

For further information on UF's Grades and Grading Policies, go to  
<http://www.registrar.ufl.edu/staff/grades.html#grading>

**DISABILITIES:** If you are applying for disability resource status come see me the first week of class. Students requesting classroom and exam accommodations should contact the Dean of Students Disability Resources Center at <http://www.dso.ufl.edu/drc/> and obtain the proper forms that need to be turned in to me during the first week of class. It is the student's responsibility to schedule and arrange accomodations with the DRC.

**COURSE INFO:** CHM 2045 and CHM 2045L constitute the first semester of the two term sequence of General Chemistry, CHM 2045-2045L-2046-2046L. This sequence is suitable for all science and engineering majors. To continue into CHM 2046, you must earn a grade of C or higher in CHM 2045 and have MAC 1140 or MAC 1147 or Calculus 1 or the equivalent of these or higher completed (Statistics does not count). If you drop your math class and do not have MAC 1147 or the equivalent or higher you will not be able to go on to CHM2046 even if you pass CHM2045 (you will be ejected from CHM2046 even if the system allows you to register).

Students with disabilities may request special classroom accommodation. See <http://www.chem.ufl.edu/~itl/disabilities.html>.

Students may seek mental health counseling at any time. See <http://www.chem.ufl.edu/~itl/counseling.html>.

**GENERAL EDUCATION CREDIT:** This course is available for general education credit. This course introduces students to fundamental concepts of chemistry including bonding, atomic and molecular structure, chemical reactions, states of matter, and reaction rates. The scientific method and the place of chemistry in the everyday world are emphasized.