

CHM 2046	General Chemistry 2 Gower Sections	Fall 2015
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INSTRUCTOR: Jeff Gower (jgower@ufl.edu)

Lectures: MWF 4th and 8th Periods (CLB 130); TR 10th–11th Periods (Flint 50)

Discussion Classes: Tuesdays and Fridays (be sure to attend your correct class)

Office hours: MWF 6th–7th Periods (or by special appt.) (CLB 314, 392-2155)

PREREQ: Grade of C or higher in CHM 2045.

TEXT: Chemistry: The Molecular Nature of Matter and Change (6th Edition)

by Martin Silberberg (McGraw-Hill)

PLANNED LECTURE SCHEDULE

Planned Lecture Schedule	Chapters
Aug. 24 – Sep. 11: Acid-Base Equilibria	17–19.2 (skip 17.3 and 17.6)
Sep. 14 – 22: Solubility Equilibria	19.3–19.4
Sep. 24 – Oct. 2: Gas-Phase / Heterogenous Equilibria	17.3 and 17.6
Oct. 5 – 20: Thermodynamics and Equilibria	20 (review Ch. 6)
Oct. 22 – Nov. 11: Redox Reactions / Electrochemistry	4.5–4.6 and 21
Nov. 13 – Dec. 2: Main-Group and Transition Elements	14, 22, 23 (review Ch. 8–13)
Dec. 3 – 9: Nuclear Chemistry (and Intro to Organic Chemistry)	24, 15

HOLIDAYS (no classes):

Sep. 7 (Labor Day); Nov. 6 (Homecoming); Nov. 25–27 (Thanksgiving)

E-LEARNING (<http://lss.at.ufl.edu>): We will be using the **CANVAS** option in E-Learning for this course. Here you will find the syllabus, your gradebook for the class, selected lecture material, Online-Practice-Exam-Problems, lecture video link, files, Suggested-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. 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 PARTICIPATION: You are fully expected to attend all lectures during the periods for which you are registered. Lecture attendance and participation will be monitored and facilitated by the Learning Catalytics student response system (<https://learningcatalytics.com/>). Read carefully the "Getting Started with Learning Catalytics" document posted in Canvas to register with the system – you will be provided a free access code in lecture. Be sure to have registered for Learning Catalytics by August 31st, the first lecture day after Drop-Add ends. Since unavoidable emergent situations (illnesses, accidents, family emergencies, etc.) do arise occasionally, there will be a 10% adjustment for attendance/participation points (i.e., final total points will be divided by 0.90). For further information about the official UF attendance policy, see <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

DISCUSSION CLASSES: You are fully expected to attend all Discussion Classes during the periods for which you are registered. Discussion Classes Begin On Friday, August 28th. During each of the Discussion Classes your TAs will:

- 1) hold interactive open-discussion sessions covering any of the previous week's lecture material or any related conceptual or calculational concerns that the students may have, as well as student questions about Online-Practice-Exam-Problems or Current-Semester-Exam-Problems or Suggested-End-Of-Chapter-Problems; and
- 2) administer short quizzes to help assess the extent to which the students are keeping up with the material each week and are working on the Online-Practice-Exam-Problems and Suggested-End-Of-Chapter-Problems.

“HOW TO SUCCEED IN COLLEGE CHEMISTRY”: This document is posted in the Files folder in Canvas. Read it carefully and do exactly as it says. The detailed structured method of self-assessment strategic study skills in this document has been proven to work many times by many different students over many years (including yours truly). For most students, it is the only way to succeed in the course (and in other courses like this one). Trust me on this: failure to read and do exactly as it says in this document will most likely result in frustration and lack of success in this course for the majority of students. Please do not disregard this advice.

ONLINE PRACTICE-EXAM PROBLEMS: Many of my previous Progress-Exam questions have been compiled and are included in the “Quizzes” function in Canvas, so that you can use them for self-assessment purposes to identify and correct your own individual weaknesses with the material. No class points will be awarded for these “Quizzes” but they are highly recommended for self-assessment preparation for Discussion-Class Quizzes and Exams. (Follow the “How To Succeed In College Chemistry” strategy when doing these problems – failure to use the problems correctly will result in a false sense of achievement and ultimate frustration – trust me on this!).

SUGGESTED-END-OF-CHAPTER (EOC) PROBLEMS: These are problems from the Silberberg 6th edition (see top of syllabus) textbook that are selected based on their appropriateness for the course. The complete worked-out solutions are posted in Canvas for each and every EOC problem in this textbook – be sure to utilize this valuable self-assessment resource! These problems are also recommended for self-assessment preparation for Discussion-Class Quizzes and Exams. (Again, read the “How To Succeed In College Chemistry” document for vital strategies for success in this course when doing EOC problems).

PROGRESS-EXAMS AND FINAL-EXAM SCHEDULE: You may only use a non-graphing non-programmable scientific calculator (with log, ln, root, and exponent (scientific notation) functions) on exams (unless the exam is announced to be a conceptual-only exam, in which case no calculators will be allowed). Be sure to also bring pencils, section number, and your UF ID card. No notes, papers, cell phones or other electronic devices can be in view during exams.

Date	Exam
Wednesday, Sep. 23 (8:20-10:20pm)	Progress-Exam 1
Wednesday, Oct. 21 (8:20-10:20pm)	Progress-Exam 2
Thursday, Nov. 12 (8:20-10:20pm)	Progress-Exam 3
Tuesday, Dec. 15 (10:00am-12:00pm)	Final-Exam

All exams are cumulative. Cumulative exams are a necessity in CHM2046 because each successive topic builds upon, and depends upon, previously covered material. Therefore, do not allow yourself to get behind, and always review your previous exams when studying for successive exams.

Checking your Scantron: Scantrons may be viewed during the two established instructor office hour sessions (in CLB 314) following the posting of the exam score in your Canvas gradebook, after which no further scantron checking will be accommodated.

PROGRESS-EXAM OR DISCUSSION-QUIZ CONFLICTS/ABSENCES: No makeup Progress Exams or Discussion Quizzes will be given after the regularly scheduled exam/quiz date for any reason. Since unavoidable emergent situations (illnesses, accidents, family 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) and a dropped-quizzes policy (the best 10 of 12 Discussion Quizzes will be counted toward your grade). If you know in advance that you must be absent for an exam or quiz due to a documented and approved academic or UF athletic conflict or other pre-approved conflict, bring the applicable documentation to me (for exams) or your TA (for quizzes) at least one week prior to the scheduled exam or quiz, and an early conflict exam or quiz will be arranged for you (failure to bring documentation and/or obtain one-week pre-approval for the early exam/quiz will result in your request being denied). For more information on UF General Chemistry exam policy, see http://iteach.chem.ufl.edu/Exam_Absence_Policy_GChem_s13.pdf

CHEMISTRY LEARNING CENTER (CLC): Tutoring from graduate student TAs is available in the CLC Mon-Friday in Flint Hall 257. 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 in Canvas.

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

CONTACTING THE INSTRUCTOR / OFFICE HOURS: Course administrative queries can be emailed to the instructor or made during office hours (or by special appointment if necessary). Chemistry queries should be made in person during office hours or before/after lectures. If this is not possible, please visit the CLC. Please consult the online chapter solutions (if applicable) before coming to office hours.

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

Progress Exams (best 2 of 3 @ 200 pts)	400 pts
Lecture Attendance and Participation*	100 pts
Discussion-Class Quizzes (best 10 of 12 @ 5 pts)	50 pts
Final Exam	250 pts
TOTAL	800 pts

*Lecture Attendance and Participation points will be calculated as follows and capped at 100 pts maximum:

$$\{[(\text{points earned}) \div (\text{total possible points})] \div [0.90 \text{ adjustment}]\} \times 100 \%$$

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

90-100% = A 86-89% = A- 83-85% = B+ 80-82% = B 76-79% = B-
73-75% = C+ 70-72% = C 66-69% = C- 63-65% = D+ 60-62% = D
< 60% = E

For further information on UF's Grades and Grading Policies, go to <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

INSTRUCTOR EVALUATIONS: Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu> during the last two or three weeks of the semester. Students will be given specific times when they are open. Summarized results of these evaluations are available to students at <https://evaluations.ufl.edu/results/>.

HONOR CODE: (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>)

The UF Student Honor Code 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.

DISABILITIES / STUDENT MENTAL HEALTH COUNSELING: Students requesting classroom and exam accommodations should contact the Dean of Students Disability Resources Center (DRC) at 392-8565 or <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 or as soon as possible after obtaining the paperwork from the DRC. It is the student's responsibility to schedule and arrange accommodations with the DRC. Students may seek mental health counseling at any time. See <http://www.counseling.ufl.edu/cwc/>.

COURSE INFO: CHM 2046 and CHM 2046L constitute the second semester of the two term sequence of General Chemistry, CHM 2045-2045L-2046-2046L. This sequence is suitable for all science and engineering majors.

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, reaction rates, chemical thermodynamics and equilibria. The scientific method and the place of chemistry in the everyday world are emphasized.

PROGRAM OBJECTIVES: General Chemistry and Qualitative Analysis (aka General Chemistry II, or CHM2046) covers the basic concepts, theories and terms related to chemical equilibria, thermodynamics, elemental characteristics, and the chemical potentials associated with chemical species in systems covered in the course. The course will focus on major scientific developments and their impacts on society, science and the environment, and the relevant processes and potentials that govern and characterize the discussed chemical systems. Students will formulate empirically-testable hypotheses derived from the study of these systems, apply logical reasoning skills through scientific criticism and argument, and apply techniques of discovery and critical thinking to evaluate potential outcomes of chemical processes. In addition to the described educational objectives of the course, it is also expected that preparatory objectives will be met and surpassed, with regard to rendering students equipped for success in future courses in the physical sciences, by way of a sound competency with the CHM2046 material and how it relates to earlier studies (CHM2045 and earlier) and later studies in chemistry and other scientific disciplines.

These objectives will be accomplished through interactive participation in the course lectures and discussion sections, and individual work done on provided guided and structured homework resources. Successful achievement will be assessed through weekly discussion section quizzes and monthly Progress Exams, as well as a Final Exam.

GENERAL EDUCATION STUDENT LEARNING OUTCOMES: The following learning outcomes (see table below) will be assessed through monitored Discussion Section preparation and participation, as well as through online assessments and progress (mid-term) examinations and final examinations.

GENERAL EDUCATION STUDENT LEARNING OUTCOMES, continued:

Area	Institutional Definition	Institutional SLO
CONTENT	Content is knowledge of the concepts, principles, terminology and methodologies used within the discipline.	Students demonstrate competence in the terminology, concepts, methodologies and theories used within the discipline.
COMMUNICATION	Communication is the development and expression of ideas in written and oral forms.	Students communicate knowledge, ideas, and reasoning clearly and effectively in written or oral forms appropriate to the discipline.
CRITICAL THINKING	Critical thinking is characterized by the comprehensive analysis of issues, ideas, and evidence before accepting or formulating an opinion or conclusion.	Students analyze information carefully and logically from multiple perspectives, using discipline specific methods, and develop reasoned solutions to problems.