CHM 2051
GENERAL CHEMISTRY II HONORS
SPRING 2015 – SECTIONS 7201 and 115G

Professor: **Dr. Rick Yost**
Office: CLB C210, Phone (352)392-0557, Email: ryost@chem.ufl.edu
Office Hours: T, Th 7th period (1:55–2:45 PM), F 4th period (10:40–11:30 AM) or by appointment

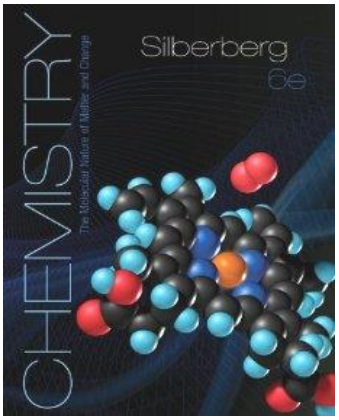
Teaching Assistant: **Mr. Mike Costanzo**
Office: CLB 208, Phone: (352)392-0515, Email: mtcostan@ufl.edu
Office Hours: T 5th period (11:45–12:35PM), W 3rd period (9:35–10:25 AM), Th 2nd period (8:30–9:20 AM) or by appointment

Lecture: T and Th – 3rd and 4th periods (9:35-11:30 PM), Leigh 207. Typically the first period each day will be used for lecture (slides will be available on the web), with the second period used for discussions, problem solving, team projects, guest lectures, demonstrations and exam reviews.

Course Description: CHM 2051 is an Honors alternative to the traditional General Chemistry II course, CHM 2046. We will cover many of the same topics, often in more depth and at a more personal level, and will take time to consider extensions to real-world applications and insight into current research, all in a more intellectually stimulating small-course environment. The course includes ~2 periods a week of lecture, with the balance of the time devoted to discussions, small-group study, problem solving, demonstrations, debates, and guest lectures. We will also replace much of the descriptive inorganic chemistry covered towards the end of 2046 with advanced topics in atmospheric chemistry (acid rain and global warming, for instance), nuclear chemistry, and introductions to organic, polymer, and biochemistry. The objective of the course is to help you both master the material and develop the problem-solving and critical thinking skills required to assess and appreciate the impact of chemistry on important issues, be they global or personal. Upon completion of the course, you will have a solid foundation in the principles of chemical dynamics and be prepared to progress on to more specialized topics in upper division courses in Chemistry and other disciplines.

Prerequisites: CHM 2045 with a grade of "A" (exceptions may be allowed).

Co-requisites: CHM 2046L or 2054L.



Textbook: Chemistry "The Molecular Nature of Matter and Change", by Martin S. Silberberg, 6th ed, McGraw Hill, 2012. This classic text does an excellent job of introducing chemistry as the central science. It will be used as reading material for lectures and for background for exams; homework problems may be assigned from the text. Most of you will have used this text in CHM 2045.

E-Learning: CHM 2051 will make use of UF's E-Learning system (*aka* Canvas) to provide access to lecture slides (slides will typically be posted 2-5 days before each lecture), homework assignments and answer keys, sample exam questions, additional course content, course news and calendar, as well as access to your individual grades and class grade distributions. If you don't have Acrobat Reader on your computer to view the lecture slides, download it from the E-Learning site. Log in to E-Learning at https://lss.at.ufl.edu/ to access *CHM 2051*. You'll need your GatorLink ID and password to access E-Learning; if you have problems with E-Learning, you can contact the UF Help Desk in the Hub, refer to https://lss.at.ufl.edu/help.shtml, try an email to Learning-support@ufl.edu, or call 392-HELP.

Course Assessments:

***Exams*:** (750 points)
The course will include three in-class progress exams (250 points each) plus an (optional) comprehensive final exam (250 points) during the final exam period. Each exam will be scheduled for 75 minutes in Leigh 207. Each exam will cover classroom material and homework problems

during the preceding portion of the course; the final will cover material throughout the course. The best 3 out of the 4 exam scores will count towards the course grade. Since the lowest exam score will be dropped, no make-up exams will be given. Thus, it is wise to save the dropped exam for unforeseen illness, family emergency, etc., or to allow you to skip the final if you're satisfied with your grade at that point. Exam keys will be posted on the E-Learning website.

***Homework Problems*:** (150 points)

Because chemistry is such a "learn by doing" subject, homework plays a critical role in helping you learn the concepts and material! Homework problem sets will be assigned each Thursday (in lecture and on the E-Learning site) and will be collected the following Thursday *at the beginning of lecture.* You may turn it in at the start of lecture, or early via the E-Learning Assignment Dropbox as a Word or .pdf document. If you must miss lecture the day homework is due, you must turn it in *prior* to lecture. No late homework will be accepted. All ten homework sets will be graded (15 points each). The answer key for each homework set will be posted on E-Learning after the due date. Graded homework will be returned in lecture.

***Team Projects and Class Participation*:** (100 points)

The students in the class will be divided into six teams, and each of these teams will participate in one of three "debates" on controversial topics in Chemistry, and will organize and participate in two of four "Jeopardy" or "Who Wants to be a Millionaire" games. The members of each team will receive points for their participation in these debates and games (3 x 25 = 75 points) plus points for general course participation (25 points).

***Extra Credit Quizzes*:** (10 points each)

Unannounced extra credit quizzes (over and above the 1000 points in the course) will be given randomly in the course and will be used to encourage you to keep up with the course material and to obtain an indication of your attendance at lecture. Keys will be posted on E-Learning.

Points in Course:

Best 3 out of 4 exams	750
Homework Problems	150
Team Projects and Class Participation	100
Total	1000
Extra Credit Quizzes	?

Course Grading: Individual exams, quizzes, and homework problem sets will not have letter grades assigned; however, the following course grading scale will provide you some idea of your performance as the course progresses. The grading scale may be lowered at the end of the course, but will not be raised. Thus, you can monitor your progress during the course. More info on UF Grading Policies are available at https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx.

A	≥850	B-	725-749	D+	600-624
A-	825-849	C+	700-724	D	550-599
B+	800-824	C	650-699	E	≤549
B	750-799	C-	625-649		

Other Information:

Attendance: Past experience in CHM 2051 has shown that performance on exams is highly correlated with attendance in class. I encourage you to print out the lecture slides posted on E-Learning and bring them along to lecture to help you take notes. However, those slide copies will cover only a fraction of the material covered in the course. Other activities during class (discussion, problem-solving, team activities, guest lectures) will be designed to significantly enhance the material presented in the course, and will be critical to performance on exams. The extra credit quizzes given during class can also improve your course grade significantly. Thus, I expect you to attend class, and you are responsible for all announcements made in class. Also check the course website and the E-Learning site weekly for announcements and other news. See https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx for UF's policy on class attendance.

Absences: No make-up exams or quizzes will be given; late homework problem sets will not be accepted. Plan accordingly. If you have a planned conflict with an exam (for instance, a religious observance or a documented and approved UF academic or athletic conflict), please see Dr. Yost at least a week before the conflict to schedule an early exam. For more information, see http://web.chem.ufl.edu/generalchemistry/images/exam_absence_policy_gen_chem_s13.pdf.

Office Hours: Office hours for Dr. Yost and for the TA are listed above. Other times are available – you can email or call to make an appointment, or simply drop by CLB C210 to see if Dr. Yost is available. We're both here to help you excel in this class!

Chemistry Learning Center (CLC): You'll find other General Chemistry TAs available for help in the CLC (Flint Hall 257-258) daily Monday – Friday, in addition to our office hours.

Re-grade Policy: We do our best to make the grading fair. If you believe there was an error in the grading of a quiz or exam, you will have *one week* after its return for consideration of grading errors. Briefly describe the grading error as envisioned by you on the front page of your exam or quiz and turn it into Dr. Yost or the secretary in room CLB 210 before the designated time is over. If you pick up your graded quiz or exam late, you must still conform to the above deadline.

Communication with Instructor and Teaching Assistant: Please do not use e-mail to ask us specific questions on homework problems or exams - such questions should be asked by coming to our office hours. Email is not an efficient medium for teaching (it is easy to type a question, but very time-consuming to type coherent explanations, particularly without drawings and equations). Feel free to use email if you need logistical information such as time and place of an exam.

***Students with Disabilities*:** Students with disabilities requesting accommodations should first register with the Disability Resource Center (392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, you will receive an accommodation letter which must be presented Dr. Yost at least two weeks before the exam.

***Academic Honesty*:** Academic honesty and integrity are fundamental values of the University community. The UF Student Honor Code at https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/. Your homework, quizzes, and exams should all reflect your own work, and you are expected to report any condition that facilitates academic misconduct.

Online Course Evaluation: You are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester; I will let you know when they are open. Summaries of these assessments are available at https://evaluations.ufl.edu/results/.

Syllabus: This syllabus represents my current plans and objectives. As we go through the semester, those plans may need to change to enhance your learning opportunities. Such changes will be communicated clearly, are not unusual and should be expected.

***Pet Peeves*:** Late arrivals and early departures. Reading newspapers (or whatever), texting, emailing, or surfing the web during lecture. Cell phones ringing. Please be considerate and I'll be the same.

Overall: Logistics and details aside, I'm delighted to have you in this class! I'm looking forward to spending the semester with you, and I want each of you to do well. The best advice I can offer is to keep up. If you get behind, catching up is tough – don't let yourself get into that situation. The TA and I are here to help you learn (and enjoy!) the material; if you're confused or not following the material, see us right away!

CHM 2051 - General Chemistry II Honors – Spring 2015
Lecture Schedule

DATE	DAY	Topic	3rd Period	4th Period	Collect
1/6	T	Equilibrium (Ch. 17)	Course Intro; Lecture 1	Problem Solving – Q, K	
1/8	Th	"	Lecture 2	Problem Solving –factors affect Equilibrium	
1/13	T	Acids,Bases (Ch. 18)	Lecture 3	Problem Solving – SA/SB	
1/15	Th	"	Lecture 4	Problem Solving – WA/WB	Homework 1
1/20	T	"	Lecture 5	Graph. Methods – fractional composition	
1/22	Th	Acid-Base, Sol (Ch. 19)	Lecture 6	Problem Solving - Buffers	Homework 2
1/27	T	"	Lecture 7	Talham - Biomineralization	
1/29	Th	"	Lecture 8	Jeopardy I	Homework 3
2/3	T	"	Lecture 9	Review for Exam I	
2/5	Th	**Exam 1**			
2/10	T	Atmospheric Chemistry	Lecture 10	Problem Solving – Atmospheric Chemistry	
2/12	Th	"	Lecture 11	Problem Solving – Atmospheric Chemistry	Homework 4
2/17	T	"	Lecture 12	Delfino – Climate Change	
2/19	Th	"	Lecture 13	Debate I - Climate Change	Homework 5
2/24	T	ΔS, ΔG Equil'm (Ch. 20)	Lecture 14	Continue with lecture	
2/26	Th	"	Lecture 15	Problem Solving – Entropy, Free Energy, Equilibrium	Homework 6
3/3	T	***SPRING BREAK***			
3/5	Th	***SPRING BREAK***			
3/10	T	ΔS, ΔG Equil'm cont'd	Lecture 16	Lottenberg-Sickle Cell	
3/12	Th	Electrochem (Ch. 21)	Lecture 17	Jeopardy II	Homework 7
3/17	T	"	Lecture 18	Review for Exam 2	
3/19	Th	**Exam 2**			
3/24	T	Nuclear Chem (Ch. 24)	Lecture 19	Debate II - Nuclear Power	
3/26	Th	"	Lecture 20	Kevin Wang – Traumatic Brain Injury and Concussion	Homework 8
3/31	T	Organic Chem (Ch. 15)	Lecture 21	Continue with lecture	
4/2	Th	"	Lecture 22	Debate III - Fracking	Homework 9
4/7	T	Synth.,Natural Polymers	Lecture 23	Sumerlin – Polymer Chemistry Research	
4/9	Th	"	Lecture 24	Jeopardy III	Homework 10
4/14	T	"	Mulligan–Forensic DNA, Disease, Human Migration	Review for Exam 3	
4/16	Th	**Exam 3**			
4/21	T	"	Lecture 25	Jeopardy IV	
4/29	W	5:30 – 7:30 pm - **Comprehensive Final Exam (Optional)**			