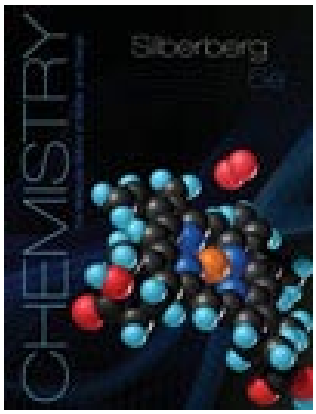
Syllabus

CHM 2045 General Chemistry Fall 2012

Sections	Class Period	Instructor	Office	Office Hours
5767, 6187, 6192, 6208, 6477, 6488	11th (6:15-7:05 pm)	Polfer	CLB 311C	M 7th (1:55-2:45 pm) W 7th (1:55-2:45 pm) R 6th (12:50-1:40 pm)



TEXTBOOK: *Molecular Nature of Matter and Change*, by Silberberg

- **Publisher: McGraw-Hill, 6th Ed**
- **ISBN: 978-0077664091 (13 digits) or ISBN: 0077664094 (10 digits)**

HOMEWORK:

- All **homework assignments** will be done **online** on the *McGraw-Hill* ***Connect*** website:
  http://connect.mcgraw-hill.com/class/n_polfer_copyofallfall2012sections
- If you do **not purchase** the **textbook** above (ISBN), you will **not have access to** the electronic homework ***Connect***.
- Alternatively, you can also buy the $49.99 online version

REQUIREMENTS:

- 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 I** 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 CHM 2046** even if you pass CHM 2045!

CHM 2045 General Chemistry

Section number:_____ Discussion time/location:_____

(Tentative) Class Schedule (Fall 2012)

CLB 130 Class times: M, T, R 11th period (6:15-7:05 pm)

Dates	Topics (# of lectures)	Chapters
Aug. 23–27	Introduction and Review: Atoms, Molecules, and Ions (2)	Chap. 1–2
Aug. 28 – Sept. 6	Mass Relations and Stoichiometry (3-4)	Chap. 3
Thursday, Sept. 6	Online Assessment Quiz #1	Chaps. 1–3
Sept. 10–13	Aqueous Reactions (3-4)	Chap. 4
Thursday, Sept. 13 (8:20-10:20 pm)	Progress Exam 1	Chaps. 1–4
Sept. 17–20	Enthalpy & Calorimetry (3)	Chap. 6
Thursday, Sept. 20	Online Assessment Quiz #2	Chap. 6
Sept. 24–25	Atomic Structure (2)	Chap. 7
Sept. 27 – Oct. 4	Electron Configuration and Periodic Trends (4)	Chap. 8
Thursday, Oct. 4	Online Assessment Quiz #3	Chap. 7–8
Oct. 8–11	Chemical Bonding Models (3)	Chap. 9
Oct. 15–16	Molecular Geometry (2)	Chap. 10
Thursday, Oct. 18	Online Assessment Quiz #4	Chaps. 9–10
Oct. 18–23	Covalent Bonding Theories (3)	Chap. 11
Wednesday, Oct. 24 (8:20-10:20 pm)	Progress Exam 2	Chaps. 6–11
Oct. 25–30	Gases (3)	Chap. 5
Nov. 1–6	Intermolecular Forces and Liquids and Solids (3)	Chap. 12
Thursday, Nov. 8	Online Assessment Quiz #5	Chaps. 5, 12
Nov. 8–19	Solutions (4)	Chap. 13
Monday, Nov. 19 (8:20-10:20 pm)	Progress Exam 3	Chaps. 5, 12, 13
Nov. 26 – Dec. 3	Chemical Kinetics (4)	Chap.16
Dec. 4	Cumulative Review (1)	Cumulative
Saturday, Dec. 8 (5:30–7:30pm)	Final Exam	Cumulative

Holidays: Labor Day (Monday September 3rd), Homecoming (Friday 9th and Sat. 10th November). Veteran's Day (Monday Nov. 12); Thanksgiving (Wednesday, Thursday and Friday; Nov. 21 to 23)

Course Objectives: CHM 2045 (General Chemistry I)

- To build a **basic foundation** of the science of chemistry (which is crucial to an understanding in many other disciplines: medicine, molecular biology, genetics, pharmacology, ecology, atmospheric science, engineering, material science, environmental science, etc.)
- Learn about chemistry in your daily life
- To **analyze scientific concepts** and **think critically** (identify whether a problem is scientific or pseudo-scientific)
- To learn **problem-solving** via the *scientific method* (practice your **logical thinking** skills)

Course material (in order covered in class/*Topical Questions*):

Chapter **1** **Keys to the Study of Chemistry**
How and what do we measure?
What is the scientific approach?

Chapter **2** **The Components of Matter**
What is matter made up of?
What are isotopes?

Chapter **3** **Stoichiometry of Formulas and Equations**
What is a mole?
How do we derive a chemical formula from mass analysis?

Chapter **4** **Three Major Classes of Chemical Reactions**
What happens to ionic compounds when they are dissolved in water?
What are redox reactions?

Chapter **6** **Thermochemistry: Energy Flow and Chemical Change**
How is the difference between heat and work?
What is the enthalpy of a reaction?

Chapter **7** **Quantum Theory and Atomic Structure**
Is light a particle or a wave?
What are quantized energy levels?

Chapter **8** **Electron Configuration and Chemical Periodicity**
What is the electron configuration of an atom?
What chemical reactivity does one predict from atomic properties?

Chapter **9** **Models of Chemical Bonding**
How are atoms bound together in molecules?
What is the difference between a covalent and an ionic bond?

Chapter **10** **The Shapes of Molecules**
What is the octet rule?
How does one predict the shape of a molecule?

Chapter **11** **Theories of Covalent Bonding**
What is valence bond theory?
What is the difference between sigma and pi bonds?

Chapter **5** **Gases and the Kinetic-Molecular Theory**
How does an ideal gas behave?
What is the partial pressure of a gas?

Chapter **12** **Intermolecular Forces: Liquid, Solids, and Phase Changes**
What is a phase transition?
What forces hold solids or liquids together?

Chapter **13** **The Properties of Mixtures: Solutions and Colloids**
What is a colloid?
How does temperature affect solubility?

Chapter **16** **Kinetics: Rates and Mechanisms of Chemical Reactions**
What is the reaction order?
What is the rate-determining step of a reaction?

TIPS: Chemistry is very much a "learn by understanding" subject. Because of this you must work in this course to do well. That means you must read the textbook, work the sample problems as you go, and do the electronic homework until you *understand*! Then you should work extra problems (from the book, slides and old exam problems) to test your understanding.

QUIZZES: The Quizzes will be taken on **Sakai**. Five (5) Discussion Quizzes will be given (see dates above in green). **No make-up quizzes will be given for any reason.** As with the progress exams, to accommodate unavoidable conflicts, we offer a dropped-quiz policy (the best 4 of 5 quizzes counting toward your grade – see under "GRADES" below). The lowest grade will be dropped, for a maximum total of 100 course points.

DISCUSSION: First discussion will be Wednesday, August 29 check for time and venue on http://www.registrar.ufl.edu/soc/ using your section number!

EXAMS:

- **Three** progress exams and a **cumulative** final exam will be given in the course.
- All exams will be given in the evening (8:20 pm start time) and rooms will be assigned by section number and posted on the Home Page, so **know your section number!** The first progress exam is on **Sept 13**.
- Be on time and bring a calculator (non-graphing) and pencil to the exam room nothing else. NO NOTES OR INFORMATION SHEETS, NO COMPUTERS, CELL PHONES or any information storage device electronic or paper may be used during the exam.

COURSE POLICIES

- Read your syllabus carefully, it is a **grading contract**
- You are required to attend all classes and discussions
- You must check on Sakai on a weekly basis that all **grading information** is **correct**. Should you not see your grade or notice a mistake, it is **YOUR responsibility** to inform me. If you wait until the last few days of the semester to point out an incorrect grade, you may lose your points!
- **No make-up progress exams will be given for any reason.** We have no mechanism with such a large number of students for make-up exams**.** Exam dates are clearly indicated on the syllabus and no excuse will be accepted for not taking the exams on the scheduled date and time. The Final Exam may not be taken early**.**
- If you have a **personal problem** that prevents you from meeting course requirements, you must go and see the **Dean of Students**.
- If you need help with Chemistry questions, go to the Chemistry Learning Center (in Flint 257-278), where graduate students can assist you. A schedule with TA names and their times in the CLC will be posted.
- **Learn how to fill out a scantron**. These errors are inexcusable. They include form code errors, registry errors, and even errors in the name and UFID. You WILL BE penalized for scantron errors that require extra work to get your grade into the e-learning grade book: First offense 9 points, second offense 18 points, third offense 24 points, and fourth offense 36 points.
- Students may NOT use graphing calculators in exams. You must use a **scientific calculator** with exponents and log and ln functions. Bring a second calculator, just in case your first calculator gives up. No other device may be used as a calculator i.e. cell phone, iPods etc. **No cell phones** are allowed in the exam rooms.
- Do not email me, or leave voice or written messages. There are too many of you to do this on a 1-on-1 basis. If you have questions, come and see me right before or after class, or during office hours.

SCORING: Your grade for the term will be determined as follows:

Progress Exams (best 2 of 3@ 250 pts each)	500
McGraw-Hill Connect (free with the text if you purchased the ISBN listed above.)	80
Quizzes (best 4 of 5 @ 30 points each)	120
Final Exam	300
TOTAL	1000 pts

GRADES will <u>not</u> be curved. *The following grade cut-offs will be used: This is fixed and not negotiable*. We are now using minus grades so your grade will be based on the scale below.

A = 900	B - = 760	D + = 630
A - = 860	C + = 730	D = 600
B+ = 830	C = 700	E < 600
B = 800	C - = 660 Failing grade	

Online HOMEWORK McGraw-Hill Connect Plus**:** McGraw-Hill Connect Plus points will be up-dated on Sakai several times during the semester, usually when exam grades are posted.

<u>Tutorial</u>: http://www.youtube.com/watch?v=KAgSUaI70BE

McGraw-Hill Connect has two parts *LearnSmart* and *Connect*:

LEARNSMART

LearnSmart is an interactive study tool that adaptively assesses students' skill and knowledge levels to track which topics students have mastered and which require further instruction and practice. Based upon student progress, it then adjusts the learning content based on their knowledge strengths and weaknesses, as well as their confidence level around that knowledge.

LearnSmart's adaptive technology also understands and accounts for memory degradation. It identifies the concepts that students are most likely to forget over the course of the semester—by considering those that they had been weakest on or least confident with—and encourages periodic review by the student to ensure that concepts are truly learned and retained. In this way, it goes beyond systems that simply help students study for a test or exam, and helps students with true concept retention and learning.

Dynamically generated reports document progress and areas for additional reinforcement, offering students real-time feedback on their content mastery. By monitoring student progress, educators have the ability to instantly evaluate the level of understanding and mastery for an entire class or an individual student at any given time.

For this Fall 2012 term in CHM 2045 **each chapter is worth 2 points** for completing LearnSmart. *LearnSmart* is the **conceptual** portion of the electronic homework set for each chapter.

Due dates are set for each chapter and **<u>no</u> credit is given for late work**. You may go back and use any chapter as a review after the due date.

CONNECT

McGraw-Hill *Connect* is an online assignment and assessment solution, providing instructors and students with tools and resources to maximize their success. For this Fall 2012 term in CHM 2045 **each chapter is worth 5 points** for completing Connect. Connect is the **calculation** portion of the electronic homework set for each chapter. Due dates are set for each chapter and **<u>no</u> credit is given for late work**. You may go back and use any chapter as a review after the due date.

Each posting is the new total of the points you have. Keep up with your McGraw-Hill Connect grade and know your due dates. If you wait till after the classes end to discover a grade is incorrect you will lose points. We will not reopen up or extend the dates just because you missed the due date. You have several days to complete each WEB Assign assignment. Do not wait till the last minute to do your assignments! Computer and server problems are yours and will not be considered.

Sakai: To access Sakai you should go to the website: http://lss.at.ufl.edu . Choose "Sakai", then "University of Florida". To log in, you must use your GatorLink username and password. If you do not yet have one, you must obtain one. If you have any problems with your GatorLink name or password you should contact the Help Desk at 392-HELP, or go to 520 CSE. They will only help you with GatorLink issues.

HONOR SYSTEM: All exams are given under the Honor System. Any student caught cheating will receive the maximum punishment I can bring to bear. Cheating of any kind will result in an "E" grade. Check the website for the UF policy on honesty and cheating: http://www.dso.ufl.edu/stg/Code_of_Conduct.html

CHEMISTRY LEARNING CENTER (CLC): There is free help to be had from graduate student teaching assistants in the CLC Monday through Friday in Flint Hall 257 and 258. Your discussion TA will have office hours in the CLC, but you may go there anytime and see any TA to get help on questions pertaining to chemistry. A schedule of the TA schedules will be posted in the corridor outside the CLC and on e-Learning. The CLC ends their office hours the last day of class and I end my office hours then as well.

Other Information:
Honor Code: http://www.chem.ufl.edu/~itl/honor.html
Disabilities: http://www.chem.ufl.edu/~itl/disabilities.html
Counseling: http://www.chem.ufl.edu/~itl/counseling.html

STUDENT ATHLETES and SCHOOL EVENTS: You must see me in person each and every time about taking a graded event outside posted times.

DISABILITY RESOURCES: Students requesting classroom and exam accommodations must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. Students will then go to the disability resource center. If you are applying for disability resource status, **come see me the first week of class**.

The Dean of Students Office provides individualized assistance for students with documented disabilities. Services are based upon student need and impact of their specific disability. There is no requirement for any student to self-identify as having a disability. However, students requesting classroom accommodations must register with the Dean of Students Office and provide the appropriate documentation verifying their disability. The Dean of Students Office determines what is and is not appropriate documentation. Examples of accommodations that are available to students include, but are not limited to, registration assistance, approval of reduced course load, course substitutions, classroom and examination accommodations, auxiliary learning aids, additional course drops when disability related, and assistance in other university activities. The designated coordinator for compliance with Section 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act (ADA) is the Assistant Dean of Students responsible for Students with Disabilities Programs, P202 Peabody Hall, 392-1261 (Voice), or 392-3008 (TDD).

The Disability Resource Center strives to provide quality services to students with physical, learning, sensory or psychological disabilities, to educate them about their legal rights and responsibilities so that they can make informed decisions, and to foster a sense of empowerment so that they can engage in critical thinking and self-determination.