

This is a sample syllabus for CHM1046. Students should reference the section syllabus provided at the beginning of the semester for specifics regarding assignments and grade assignments.

CHM1046 General Chemistry II

Sections 1 – XX Term 20XX

Syllabus

Welcome

CHM1046 is the second of two general chemistry courses which provide a strong chemistry foundation for undergraduate students majoring in chemistry, biochemistry and other “hard” science fields. The major objective is to develop a thorough understanding of chemistry and how it relates to everyday life. A great deal of information will be covered over the course of the semester; it is essential that you keep up with the work if you want to do well in the course – I strongly suggest you do the assigned reading in advance of lectures, review lecture notes afterward, and keep up with practice problems. **DON'T FALL BEHIND!**

The *Liberal Studies for the 21st Century Program* at Florida State University builds an educational foundation that will enable FSU graduates to thrive both intellectually and materially and to support themselves, their families, and their communities through a broad and critical engagement with the world in which they live and work. Liberal Studies offers a transformative experience; this course has been approved as meeting the Liberal Studies requirements and thus is designed to help you become a critical appraiser of scientific theories and the facts that support them.

Course Description

CHM 1046. General Chemistry II (3). Prerequisites: CHM 1045 and 1045L or CHM 1050 and 1050L, all with a grade "C–" or better. Lecture, three hours; recitation, one hour. This course includes topics such as intermolecular forces, chemical kinetics, equilibrium, acids and bases, elementary thermodynamics, and electrochemistry.

Course Objectives:

Upon completion of this course students will demonstrate the ability to...

- Think critically and cogently about causal relationships with scientific reasoning. **[Chapter Summaries 11-20]**
- Assess previous experimentation and published scientific results. **[Chapter Summaries 11-20]**
- Critically examine and evaluate scientific observation, hypothesis or model construction. **[Chapter Summaries 11-20]**
- Articulate a variety of issues created by the complex interactions among science, technology, and society. **[Chapter Summaries 11-20]**

- Use scientific perspectives to evaluate contemporary problems facing society. [Chapter Summaries 11-20]
- Define and understand the types of intermolecular forces present in inorganic and simple organic molecules; describe and predict the intermolecular forces for a particular compound; predict the effects of such forces on the physical and chemical properties of the compound. [Chapter Summaries 11, Homework 1-4, Exam I]
- Perform quantitative analysis of the colligative effects of a solute in a solution, including effects on boiling point, melting point and osmotic pressure. [Chapter Summaries 12, Homework 5-7, Exam I]
- Describe the variables which affect the rate of a chemical reaction; use experimental data to determine a rate law; use rate laws to calculate the relationship between concentration and time for a chemical reaction. [Chapter Summaries 13, Homework 8-11, Exam II]
- Define and understand the equilibrium constant for a chemical reaction, and the related concepts of LeChatlier's Principle and Equilibrium shift. Use experimental data to calculate values for an equilibrium constant and equilibrium concentrations. [Chapter Summaries 14, Homework 12-15, Exam II]
- Use the pH scale and pH relationships to determine hydrogen ion concentrations, hydroxide ion concentrations, pH or pOH for a solution, based on experimental data; perform buffer calculations for acid/base mixtures. [Chapter Summaries 15, Homework 16-19, Exam III]
- Use the appropriate equilibrium constants to determine solubility and/or precipitation point of an inorganic solute, in water or a solution. [Chapter Summaries 16, Homework 20-22, Exam III]
- Describe the thermodynamic variables of enthalpy change, entropy change and Gibbs' free energy change, and how they affect the spontaneity of a chemical reaction; predict the spontaneity of a reaction using the appropriate thermodynamic data. [Chapter Summaries 17, Homework 23-25, Exam III]
- Define and describe the types of electrochemical cells, and their individual components; predict the potential of an electrochemical cell under standard and non-standard conditions; use the quantitative relationship between current, charge and time to perform calculations. [Chapter Summaries 18, Homework 26-29, Exam IV]
- Define and describe the processes of nuclear fusion and fission, predict the products of a nuclear decay and calculate the nuclear binding energy. [Chapter Summaries 19, Homework 30-33, Exam IV]

*****NOTE***** Schedule is subject to change. Changes will be announced in class in advance and corrections to the schedule will be made online.

Materials Required –

- (1) Chang and Goldsby, Chemistry, 11th Edition
- (2) Access code for Connect and Learnsmart online Homework System
- (2) A NON-PROGRAMMABLE Scientific Calculator

Assignments and Grading:

Grading:	Homework (10 Chapters 10 pts each)	100
	Quizzes (Best 10 at 10 pts each)	100
	Exams (Best 4 of 5 at 100 pts each)	400
	Chapter Summaries (10 Chapters 5 pts each)	50
	LS Assessment	25
	Total	675

Grading Scale:

Final grades in the course will be assigned based on the percentage of total possible points in the course, according to the following percentile scale:

90-100%	A
80-89%	B
70-79%	C
Below 70%	D/F

The above scale represents the minimum grade for that percentile range, and the instructor may modify the grade cut-off percentiles downward if necessary to compensate for problematic exams or other factors. The instructor may also wish to provide modified grading scales for individual exams that deviate from the above scale in order to help students track their performance in the course; however, any

adjustments to the final grading scale will be based on point totals at the end of the course.

University Attendance Policy: Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

Missed Quiz or Exam Policy:

If you are aware that you must miss an exam or quiz prior to the day of the exam or quiz, contact the instructor or your recitation TA to see if arrangements to take the exam/quiz may be made in advance. If you miss an exam or quiz due to unforeseen circumstances, this missed exam or quiz will count as one of your dropped grades.

If you miss more than one exam or an excessive number of quizzes, the missed exam or quiz may be prorated if you have a documentable and reasonable excuse. The decision as to whether or not to prorate the missing grade is at the discretion of the instructor. Notification of the missed exam or quiz should be made as soon as humanly possible. No make-up exams will be given after the date and time of the regular exam.

Examples of Reasonable Excuses (*Documentation*) Include:

- Illness (*Note from Doctor or Thagard*)
- Jury Duty or Court Date (*Copy of Summons*)
- Car Accident or Breakdown (*Accident report or bill including time of incident*)
- Death in Family (*Copy of Obituary or service Document*)

This is not an all-inclusive list but should give you a general idea of the magnitude of an acceptable excuse and the type of documentation required to substantiate it. Other problems will be dealt with on an individual basis.

Academic Honor Policy

The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to ". . . be honest and truthful and . . . [to] strive for personal and institutional integrity at Florida State University."

(Florida State University Academic Honor Policy, found at <http://fda.fsu.edu/Academics/Academic-Honor-Policy>)

Americans With Disabilities Act: Students with disabilities needing academic accommodation should: (1) register with and provide documentation to the Student

Disability Resource Center; and (2) bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class. This syllabus and other class materials are available in alternative format upon request. For more information about services available to FSU students with disabilities, contact the:

Student Disability Resource Center 874 Traditions Way 108 Student Services Building
Florida State University Tallahassee, FL 32306-4167 (850) 644-9566 (voice) (850) 644-8504 (TDD) sdrc@admin.fsu.edu <http://www.disabilitycenter.fsu.edu/>

Free Tutoring from FSU : For tutoring and writing help in any course at Florida State University, visit the Academic Center for Excellence (ACE) Tutoring Services' comprehensive list of tutoring options - see <http://ace.fsu.edu/tutoring> or contact tutor@fsu.edu for more information. High-quality tutoring is available by appointment and on a walk-in basis. These services are offered by tutors trained to encourage the highest level of individual academic success while upholding personal academic integrity.

SEXUAL HARRASSMENT POLICY:

It is the policy of the University that its employees and students neither commit nor condone sexual harassment in any form.

http://registrar.fsu.edu/bulletin/grad/info/university_notices.htm

STUDENT ELIGIBILITY FOR AN INCOMPLETE GRADE:

Incomplete ("I") grades will not be assigned, except in the case of exceptional unforeseen circumstances that occur within the last three weeks of the semester and your work has otherwise been satisfactory (C average).

Syllabus Change Policy

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.