CHEM 162	# General Chemistry II Syllabus	

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Homework Login Page: photon.bridgewater.edu
Piazza Login Page: https://piazza.com/

Course Description: Principles of chemistry including stoichiometry, states of matter, atomic and molecular structure, chemical bonding, periodicity, energy relationships and equilibria, acid-base chemistry, electrochemistry, kinetics, solubility, thermodynamics, kinetic molecular theory of gases, and the systematic study of families of elements. CHEM 162 is the second semester of a two-semester introductory chemistry course.

Course Credits: 4 credits
Course Meeting: MWF 9:00 a.m. – 9:50 a.m. in McKinney 337

Required Materials:

- textbook – *Chemistry: A Molecular Approach* by Nivaldo Tro, 2nd ed., Prentice Hall (ISBN 978-0321651785)
- a Texas Instruments TI-30XIIS calculator (available in the bookstore or purchase on your own)
  - **NOTE: CELL PHONE USAGE WILL NOT BE ALLOWED DURING EXAMS, SO DO NOT DEPEND ON THE CALCULATOR FUNCTION OF YOUR CELL PHONE**
- a laboratory manual - General Chemistry 161-162 (purchased during the fall)
- a laboratory notebook (one from a previous lab is OK) and a pair of safety goggles

Course Objectives/Student Learning Outcomes: General Chemistry, Lab Skills

Laboratory: Chem 162 has a weekly, mandatory lab. The course work and lab work are integrated and you may be required to answer questions about what you did in lab on class exams. More information about the requirements of the laboratory are given in the laboratory manual.

Office Hours: If I am in my office and the door is open, you are welcome to come in and ask questions. I think some of my best teaching moments occur during the help I provide students outside of class. Making an appointment with me via email will be your best method of getting help outside of class, but you are always welcome to stop by my office and see if I am available.

Letters of Recommendation: Some time during your years at Bridgewater College you may need to obtain a letter of recommendation from me or your other professors for an employer, graduate school, medical school, etc. I am always willing to write these letters since I like to brag about my students who work and study so very hard. In all letters I try to convey the truth about students' achievements and behavior. Thus, your performance and behavior in the classroom and laboratory forms the content of these letters. If you show independence, competence, and knowledge of the class material or laboratory experiment, those details will be discussed in the letter. Accordingly, all poor behavior such as sleeping in class, texting, whining, cluelessness, and lack of initiative will also go into any letter of recommendation. Your behavior will not affect your grade in class unless it becomes disruptive to others in the class, but do not expect any requested letter of recommendation to be more praiseworthy than you deserve.

Grading: The grading break-down is as follows:

Item	% of Total
homework	15 %
quizzes	15 %
exams	30 %
final exam	15 %
lab score	25 %

% Earned	Letter Grade	% Earned	Letter Grade
≥ 95.0 %	A	≥ 73.3 %	C
≥ 90.0 %	A-	≥ 70.0 %	C-
≥ 86.7 %	B+	≥ 66.7 %	D+
≥ 83.3 %	B	≥ 63.3 %	D
≥ 80.0 %	B-	≥ 60.0 %	D-
≥ 76.7 %	C+	< 60.0 %	F

Homework: Homework is a very important way to learn anything. Unless you practice something over and over, you will not learn it well. Students who conscientiously complete all homework assignments generally do the well in the class. Homework will be assigned and completed using the online Computer Assisted Personalized Approach (CAPA) system. Each week CAPA assignments will be distributed in the lecture room. Each assignment has a set number and a CAPA ID number. See the "CAPA Homework Instructions" handout for more information.

IMPORTANT: Because the answers to each CAPA assignment will be different from person to person, you are strongly encouraged to work with other students on your homework and use the course discussion board. It is acceptable to work with friends to figure out the formula or answer to each question as long as each person understands the answer to the problem BEFORE it is answered. Suffice it to say that while I may not be able to tell immediately if someone has done your homework for you (this is cheating, by the way, and will not be tolerate if it is detected), I will be able to tell if you have done your own homework by your quiz and exam scores.

Extra credit for Quizzes: For most of the topics we discuss in class, you will receive two sets of homework. The first set, marked at the top with "chem162", is the set that is mandatory and will contribute to your homework score. The other set, marked at the top as "xtra162", will provide you with extra credit if you choose to do the problems. For each extra credit point you earn, you will receive $1/5^{th}$ of a quiz point. Thus, earning 100 points will earn you 20 quiz points. You will have to do a lot of work for these extra points, but the extra practice in working problems you will receive will also improve your understanding of the material.

Makeup for Homework: If you get a regular homework problem wrong, you can get half the points by going to the "Makeup162" class, logging into the same set #, and answering the same question. For example, if you get problem #3 wrong on set #10 (chem162), then after set #10 closes you can log into set #10 in the "Makeup162" class and answer problem #3 correctly. If you do you will get ½ of the value of the problem. *You will not get credit for problems that you got correctly on the regular set.*.

Course Home Page: There will be a course home page which you can locate from my home page located at the following URL: www.bridgewater.edu/~koverway/ (then go to "My Courses" and the appropriate class and section in the table given). This web site will be the depository for my class lecture notes, links to the homework system and discussion board, practice exams, and links to extra reading material.

Quizzes: Quizzes are meant to prepare you for the exams. Quizzes will be timed and taken from homework problems, information from class discussions, or examples from worksheets. The questions may require numerical answers or explanations. Pertinent mathematical formulas will be provided for you on the quiz. At least 6 quizzes will be given throughout the semester during lecture (some announced and some unannounced). I will drop the two lowest scores and include the rest in your final grade. No make-up quizzes will be given for any reason, so the quizzes you miss will be the quizzes that get dropped.

Exams: There will be 3 exams given during the semester (see schedule for dates) and one comprehensive final at the end of the semester. Pertinent mathematical formulas and/or physical constants will be provided for you on the cover page of each exam.

NOTE: If you fail to show up for an exam without notifying me **in advance**, you will receive a zero for that exam unless you have documented proof that a personal or familial medical emergency occurred the evening or morning before the exam.

Rescheduling Exams: If you need to reschedule an exam or the final exam, you must get written notice from the Academic Dean (Carol Scheppard). When I have received the written notice, I will arrange for a mutually convenient time for you to take the exam.

Emergency Relief: Since mastery of the course material is very important, one allowance will be made on your behalf. If you score poorly on one of the exams and you do much better on the final exam, the percentage score of the final exam will replace the exam score. This does not apply to an exam that you missed.

Attendance: Regular class attendance is expected of all students and attendance records are kept via missed quizzes and homework assignments that are not received in class. A student who persists in being absent from class will be reported to the Vice President and Dean for Academic Affairs. At the discretion of the instructor and the Dean, the student may be withdrawn from the course with a Withdraw Failing (WF) grade and may possibly be withdrawn from the College. Missing class too often will directly affect your grade in the course through missed quizzes, for which there are no opportunities for make-ups.

College Honor Code: Ethics, honor, and integrity are the fundamental principles at the core of the Bridgewater College experience. Our community can only flourish in an environment of trust and respect and these notions of personal honor, integrity, and faith are the fundamentals of the Bridgewater Honor System. The Code of Honor prohibits lying, cheating, and stealing and Bridgewater College's commitment to ethics, integrity, and values is embodied in the Code of Ethics. Violation of these Codes demonstrates harm to the community and an all-student Honor Council administers regulation of this Honor System. It is the goal of our Honor Council to assist in the development of students' ethical and moral base (2006-2007 Academic Catalog, Bridgewater College). It may be found at http://bridgewater.edu/WritingCenter/BCplagiarism.htm

Notification of Student Support Services: The Academic Support Center, located in Bicknell House, promotes learning skills and personal development through academic counseling, advising, tutoring services, disability services, and a transition program for selected new students. Further information may be found at http://www.bridgewater.edu/departments/academic_support/

Disabled Students: If you require any special equipment or consideration due to a learning or physical disability, please let the instructor know at your discretion.

Tentative Schedule

Day	Date	Topic	Reading	Notes
Wed	1/25/2012	Introduction, Intermolecular Forces	CH 11-11.3	
Fri	1/27/2012	Intermolecular Forces	11.4-11.6	
Mon	1/30/2012	Intermolecular Forces	11.7-11.9	
Wed	2/1/2012	The Chemistry of Solids	11.10-11.12	*quiz 1*
Fri	2/3/2012	The Chemistry of Solids/Solutions	11.13, 12-12.2,12.4-12.5	
Mon	2/6/2012	Colligative Properties	12.6-12.7	
Wed	2/8/2012	Chemical Kinetics	Chapter 13	
Fri	2/10/2012	Chemical Kinetics	Chapter 13	*quiz 2*
Mon	2/13/2012	Chemical Kinetics	Chapter 13	
Wed	2/15/2012	Chemical Kinetics	Chapter 13	
Fri	2/17/2012	Chemical Kinetics	Chapter 13	
Mon	2/20/2012	Chemical Kinetics	Chapter 13	
Wed	2/22/2012	**Exam I**	**Chapt. 11-13**	*quiz 3*
Fri	2/24/2012	Chemical Equilibrium	Chapter 14	
Mon	2/27/2012	Chemical Equilibrium	Chapter 14	
Wed	2/29/2012	Chemical Equilibrium	Chapter 14	
Fri	3/2/2012	Chemical Equilibrium	Chapter 14	*quiz 4*
Mon	***3/5/2012***	***Spring Break - no scheduled class***		
Wed	***3/7/2012***	***Spring Break - no scheduled class***		
Fri	***3/9/2012***	***Spring Break - no scheduled class***		
Mon	3/12/2012	Chemical Equilibrium	Chapter 14	
Wed	3/14/2012	Chemical Equilibrium/Review	Chapter 14	
Fri	3/16/2012	Acids and Bases	CH 15	
Mon	3/19/2012	Acids and Bases	CH 15	*quiz 5*
Wed	3/21/2012	Acids and Bases	CH 15	
Fri	3/23/2012	Aqueous Ionic Equilibrium	CH 16	
Mon	3/26/2012	Aqueous Ionic Equilibrium	CH 16	
Wed	3/28/2012	Aqueous Ionic Equilibrium	CH 16	
Fri	3/30/2012	Aqueous Ionic Equilibrium	CH 16	*quiz 6*
Mon	4/2/2012	**Exam II**	**Chapt. 14-16**	
Wed	4/4/2012	Free Energy and Thermodynamics	CH 17	
Thu	***4/5/2012***	***Last day to withdraw***		
Fri	***4/6/2012***	***Easter Break - no scheduled class***		
Mon	***4/9/2012***	***Easter Break - no scheduled class***		
Wed	4/11/2012	Free Energy and Thermodynamics	CH 17	
Fri	4/13/2012	Free Energy and Thermodynamics	CH 17	*quiz 7*
Mon	4/16/2012	Free Energy and Thermodynamics	CH 17	
Wed	4/18/2012	Electrochemistry	CH 18	
Fri	4/20/2012	Electrochemistry	CH 18	
Mon	4/23/2012	Electrochemistry	CH 18	
Wed	4/25/2012	Electrochemistry	CH 18	*quiz 8*
Fri	4/27/2012	**Exam III**	CH 17-18	
Mon	4/30/2012	review for ACS standardized final		
Wed	5/2/2012	review for ACS standardized final		
Final Exam				
Sat	**5/5/2012**	**10:30 a.m.-12:30 p.m. in MCK 337**		

Note: ***This schedule will be adjusted throughout the course to provide for maximum student learning and contextual changes within the community of learners.***

CHEM 162	# Laboratory Schedule	

The following information applies to the General Chemistry II lab for the spring semester of 2012:

- All sections of lab will meet in MCK 323 or 327
- All sections will begin at 1:00 PM and will end before 5:00 PM

Lab Section Assignments

Section	Day	Instructor
01	Monday	White
02	Tuesday	White
05	Thursday	Overway

Contact Info

Instructor	Office	Phone	Email
White	MCK 329	X 5635	lwhite
Overway	MCK 319	X 5727	koverway

Schedule of Experiments

Exp. #	Experiment Name	Week	Week Starting
11	Standardization of a Base and the Determination of the Percent Purity of an Acid	1	1/30/2012
12	Molecular Models	2	2/6/2012
14	Determination of Calcium in Water	3	2/13/2012
16	Chemical Kinetics and the Rate of a Reaction (experiment)	4	2/20/2012
16	Chemical Kinetics and the Rate of a Reaction (data processing)	5	2/27/2012
	Spring Break	***6***	3/5/2012
17	LeChatelier's Principle	7	3/12/2012
18	Determination of the Equilibrium Constant of a Reaction	8	3/19/2012
19	Determination of the pKa and Equivalent Weight of an Organic Acid	9	3/26/2012
20	The Solubility Product of Copper(II) Oxalate	10	4/2/2012
	Make-up (schedule with your instructor)	11	4/9/2012
15	Determination of Sodium Carbonate	12	4/16/2012
	Lab Practicum	13	4/23/2012

Be prepared – make sure you bring the following with you to lab *every time*

- your lab notebook
- an ink pen (no pencils)
- your lab manual
- your safety goggles
- proper clothing and shoes (see the lab manual)