Chemistry 1B: General Chemistry and Quantitative Analysis
Reedley College, Spring 2016
Lecture: MWF 11:00 – 11:50 PM in CCI 201
Lab: Tues, Thur 2:00 – 4:50 in PHY 82

Instructor: Bill Blanken
Contact info: e-mail bill.blanken@reedleycollege.edu using "Chem1B" in subject line, this helps keep the spam filter from rejecting the email if it comes from Yahoo etc., **office phone is ext. 3341, Office PHY 82, Office Hours: Mon, Wed 12:00 AM – 12:50 AM, Friday 8:00 – 9:00 AM (virtual via email)**

Course Objectives: Chemistry 1B is a general course in inorganic chemistry, including qualitative analysis and an introduction to organic chemistry. The objective is to provide students with a broad understanding of chemical change, both theoretical and experimental, and to develop skill at the calculations commonly used in practical chemistry. In addition to chemistry majors, the course material is relevant for those studying physics and engineering, and for pre-professional majors in medicine, veterinary medicine, pharmacy, and dentistry.

Study Advice: it is recommended that the relevant chapters be read before coming to class. It is also advised that for every hour of lecture 3 hours of study be done, this study time includes completing homework and working on lab experiment prelabs. Chem 1B is very math intensive and you should review the basic algebraic rules for solving equations and the rules applying to logarithms.

Course prerequisites: Chemistry 1A and Math 103
Required Materials:
Text: N. J. Tro, *Chemistry: A Molecular Approach* (**1st, 2nd or 3rd edition**, Pearson Prentice Hall). The Bookstore carries the 3rd edition, all three can be purchased at various online retailers. It is also recommended to purchase the student solution manual for the same edition of textbook.
Safety glasses and lab coats are required for lab, these can be purchased at the bookstore or online. You will also need materials to take notes and a scientific calculator ($10 or less at Walmart). Cell phones will not be allowed as a substitute for a stand alone calculator during exams. No graphing calculators will be allowed during exams.
Lecture Notes: The ability to listen carefully and to take good lecture notes is an essential college skill. Students should print out the fill-in notes and bring them to class and be prepared to copy examples done on the board and problems from the homework assignments. You should also be prepared to take notes longhand should the lecture make that a necessity.

chapter 12 Solutions - review of physico-chemical units and conversions
13 Chemical Kinetics - reaction mechanisms and catalysis
14 Chemical Equilibrium - the law of mass action and Le Châtelier's Principle
15 Acids and Bases - Arrhenius, Brønsted, Lewis
16 Aqueous Ionic Equilibrium - buffers and associated topics
17 Free Energy and Thermodynamics - the direction of spontaneous change
18 Electrochemistry - driving reactions backwards
19 Nuclear Chemistry - nuclear reactions, practical applications
20 Organic Chemistry – introduction to naming rules and reaction

Homework: there will be at least 1 homework assignment for each chapter, some will have 2. It is essential to your success in this chemistry course that you do all the assigned homework and read the relevant sections in your Textbook. The homework will be electronic in nature. If your access code did not come bundled with your textbook go to www.masteringchemistry.com , register and purchase an access code. When picking the textbook edition make sure you choose "Chemistry: A molecular approach" by Nivaldo Tro.

Laboratory Work: Lab work will follow as closely as possible the material discussed in the lectures. The lab experiments will be downloaded by the student from the chem. 1B Blackboard site. Each lab experiment will have a prelab, experimentation and data section, and a postlab. The prelab needs to be completed before coming to class. The student will also write out the experimental procedure in a laboratory notebook and this will be used in the completion of the lab. **The prelab and procedure must be done before coming to lab.** These will be checked at the start of lab. If non-completion of the prelab and procedure before the lab starts becomes habitual for a student the student will be barred from conducting the experiments. Tardiness to lab will not be tolerated, it is a violation of lab safety protocol and late students will not be allowed to conduct the experiment. Grading for the lab grade is as follows:

Lab reports and experiments	60%
Lab quizzes, 3 total	20%
Lab practical: qualitative analysis	20%

The lab portion of the course constitutes 35% of the total grade for chem. 1B. **No make up labs or lab quizzes will be allowed.**

Important dates:

MLK observance Monday Jan 18, no school
Last day to drop to avoid a W: Friday Jan 29
Lincoln holiday observed: no class, Friday February 12
Washington's holiday: no class, Monday February 15
Last day to drop with a W March 11
Easter Break: no class Monday through Friday, March 21 - 25
Final exam Wed May 18 11:00 AM – 1:00 PM
See the schedule of courses for additional dates and times

Attendance: Attendance in lecture and lab is mandatory. Occasional lecture quizzes may be given without advance warning or scheduling of the quiz. As directed by the college the student may be dropped automatically if she/he misses a combined total of 2 weeks without contacting the instructor and during the first 3 weeks of school if a student misses two lecture or labs without contacting the instructor the student will be dropped. **No make up exams will be provided.** If you miss a lecture you need to read and summarize the chapter in the textbook **before** meeting with the instructor to discuss any problems. If class is cancelled notification will be provided by the Dean's office and through Blackboard notification.

Grading and Exams: There will be **4 exams** spaced over the semester covering lecture material. There will also be a **comprehensive final** at the end of the semester covering the entire semester. **No make up exams are provided**. The only exception to this rule is a valid medical excuse with documentation to verify the medical emergency complete

with contact information for the medical personnel who wrote the note. If an exam is missed and a make up exam is allowed the make up exam will be different than what the class completed and will be more difficult. The lowest exam will be dropped and the second lowest will be doubled.

The final grade is calculated as follows:

Lab portion	**35%**
Lecture exams	**36%, each exam is worth 9% of total grade**
Final exam	**19 %**
Homework and in-class work	**10%**

The grading scale to be used is **A** 90-100%, **B** 80-89%, **C** 70-79%, **D** 60-69%, **F** 0-59% Here is an example in grade calculation. Suppose a student earned a 65, 70, 78, 58 on the four exams and a 69 on the final. They received a 78 for the lab and a 85 for the homework. All the scores are in percent. The average would calculate 67.75 for the 4 exams. This calculation for the final grade percentage is:

$$\frac{67.75}{100} x\ 36 + \frac{69}{100} x\ 19 + \frac{78}{100}\ x\ 35 + \frac{85}{100}\ X\ 10 = 73.3\%$$

Please be aware of the following rules:

- Tardiness, leaving early during lecture or lab sessions is considered disruptive behavior and will result in a partial or full absence being recorded. Students will need to sign the sign-in sheet within the first 5 minutes of class. Excessive tardiness to class will result in being locked out of class, this applies to both lecture and lab. Shortly after the beginning of lecture the door will be closed and locked.
- Excessive talking during the lecture will result in the student asked to leave the classroom, the student will also be marked absent for the day. It's disruptive and distracting to students who are trying to learn.
- Chem 1B is a college course and as such lecture and lab discussion will be collegial in nature where freedom of expression is protected and at times lecture content will be applied to current events as they relate to chemistry, science and student life, one of the goals of this course is to dispense with bad science that claims to be scientific fact.
- Cheating in any way during exams will result in a zero on the exam and reported to the Dean and other appropriate administration officials. This exam will not count as the lowest exam and will not be dropped. **If a cell phone is observed during examination the exam will be given a zero.**
- Copying of homework, experimental data, and lab reports is considered fraudulent behavior for both the copier and the originator.
- **No extra credit will be given except that which is on the exams.**
- Please turn your cell phones onto "silent buzzer" mode during lectures so as not to disturb the class. **No cell phones or i-pods will be allowed during exams.** Do not accept or make phone calls during class. This action could result in expulsion from class.
- Texting during lecture is discouraged, if texting becomes a distraction for the instructor or surrounding students the student who is texting will be asked to leave and be given an absence for the day.

- A cumulative total of 2 weeks of absences could result in being dropped from the course.

- **In the lab**:
    - Cleanliness in the lab is very important in preventing accidental contamination, at the end of each lab clean work area, points will be deducted from experiment if work area is left messy.
    - **Safety glasses need to be worn whenever somebody is conducting an experiment in the lab.**
    - **Be on time to lab, shortly after the start of lab the door will be closed and locked, tardiness will result in a zero for the lab that day.**
    - No experiments may be conducted without the instructor or teaching assistant present.
    - No horseplay or unauthorized experiments. Do not taste any chemical or smell any chemical directly.
    - No visitors inside the lab. You need to go outside to meet with them.
    - **No food or drinks allowed**.
    - Backpacks should not be left on the floor where others can trip over them.
    - **Closed toed shoes must be worn in the lab at all times.**
    - Long hair should be tied back so it will not fall into chemicals or flames.
    - If any accident occurs in the lab, inform your instructor immediately and follow safety procedures. (To be discussed during first lab period)
    - Clean up any spills promptly (Clean-up procedures will be discussed during first lab period)
    - Do not point the open end of a test tube towards anybody
    - Turn off flames when working with organic solvents. Dispose of them in waste bottles in the fume hood, not down the sink.
    - At the beginning of each lab your instructor will inform you of any special safety precautions and how to dispose of used chemicals. You need to be on time for the lab so that you hear these instructions.
    - Do not dispose of matches, paper or solid chemicals in the sink. Use the large evaporating dishes for spent matches.
    - Put broken glassware in the "broken glassware bucket", not with the trash.
    - Before leaving the lab, wipe the desktop and wash your hands with soap and water.
    - No make up labs will be done.
    - No iPods or mp3 players to be used during the lab period.
    - Dangerous behavior in the lab will result in the student being asked to leave the lab and given a zero for the lab.
    - No sagging, it's disrespectful to yourself and the people around you.

If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible.