Lecture Syllabus Chemistry 1B. General Chemistry and Qualitative Analysis. Reedley College , Spring 2000.

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Subject Prerequisite: Chem 1A with a minimum C grade.
Chem 1B meets M W F 11:00 am-11:50 in SOC 32.

Course objectives: Chemistry 1B is a general course in inorganic chemistry including qualitative analysis. The course is designed not only for chemistry majors but also for biology, physics, chemical engineering, pre-medical and pre-pharmacy professional majors. The course requires a considerable amount of time outside the classroom for studying, reading and homework assignments. The main course objective is to provide the students with a strong background in general chemistry.

Textbooks: 1. Ebbing, General Chemistry (6th edition).
2. Sackheim, Chemical Calculations B (16th edition).
Lab Manual: Radel/Navidi/Baker (et al), Laboratory Manual to accompany General Chemistry (2nd edition).
Materials : Scientific Calculator, preferably TI-82 or higher.

Lecture notes: The ability to listen effectively and to take good lecture notes represents an essential college skill. Taking good notes in this class is very essential, because most questions on quizzes and exams are derived from the lecture notes.

Homework: Homework will be assigned very often, selected problems will be graded. It is essential to your success in this class that you do your homework with the emphasis on the readings in Ebbing's text and the workbook problems from Sackheim. Homework and pop quizzes are counting for 10% towards your final grade. For more information please, refer to grading.

Attendance: Attendance in lecture and lab is mandatory. The student will be dropped automatically if he/she misses two consecutive lab sessions or four consecutive lectures without prior notification of the instructor. ALWAYS inform the instructor ahead of time by phone or by email if you have to miss a quiz or exam. Without prior notification the **grade is a 0 (=zero) for a no show.** Tardiness, leaving early, sleeping during class or lab sessions, and poor class participation are all considered disruptive behavior and will be qualified as an absence.

Quizzes and exams: In lecture there will be four quizzes covering the material of previous lectures. These quizzes will be equally weighted and the average will count towards 25% of your final grade. There will be three exams, two plus a final, each covering more material than a quiz. The exams will be equally weighted and the average will count towards 40% of your final grade.

LECTURE QUIZ AND EXAM DATES:

F 1/21 Quiz 1
F 2/11 Exam 1
F 3/3 Quiz 2
F 3/24 Exam 2
F 4/14 Quiz 3
F 5/5 Quiz 4
W 5/17 Final Exam 10:30 am-12:30 in SOC 32.

Drop Date: The drop deadline for this semester is at the end of the ninth week. Friday March 10, 2000 is the last day for you to notify admissions and your lab and lecture instructor, that you want to drop the class, otherwise a letter grade has to appear on your transcripts. A W(= withdrawal) will only be given if you have dropped the class before Friday March 10, 2000.

Grading: The lowest grade obtained for a lecture quiz will be dropped if you have fulfilled all your assignments properly and submitted to your instructor in time. Additionally, to achieve this incentive your attendance in lecture has to be 90%. Fraudulent behavior during quizzes or exams is graded with a 0(zero). Copying of homework, experimental data and lab reports is considered fraudulent behavior for the originator and the copier.
The final grade in the class is determined as follows:

Average of the three lecture exams	40%
Average of the four lecture quizzes	25%
Average of the graded homework and pop quizzes	10%
Lab work*	25%

General grade break-off: A > 90%, B 80-89%, C 70-79%, D 60-69% and F < 59%.

* Please, be advised that an overall F grade in the lab means that you fail the Chem 1B class. For details, refer to the Lab syllabus.

Lecture topics.
Each topic takes approximately two weeks.
The chapters mentioned here are referring to the 6th edition of Ebbing's General Chemistry textbook.

1. a. Review Inorganic Nomenclature, the Naming of Compounds. Chemical Kinetics. Reaction Rates, First and Second Order Reactions. Catalysts. Ch. 13.
b. Chemical Equilibrium. Le Chatelier's Principle. Ch. 14.
2. Acids and Bases. Ch. 15.
3. Acid-Base Equilibria. pH Calculations. Buffer Solutions. Ch. 16.
4. Solubility and Complex-Ion Equilibria. Ch.17.
5. Thermodynamics and Equilibrium. Free Energy, Entropy and Equilibrium Constants. Ch. 18.
6. Electrochemistry. Batteries and Fuel Cells. Electrolysis. Ch. 19.
7. Nuclear Chemistry. Ch.20.
8. Metallurgy and Chemistry of the Main-Group Metals. Ch. 21.

There will be no lectures on: M 1/17, F 2/18 and M 2/21, and during Spring Recess M 4/17- F 4/21.

Suggested readings and other materials available in the labs.

1. Kotz et al. Chemistry and Chemical Reactivity. Textbook with an instructive interactive CD-ROM.
2. CyberChem. A Multimedia Program for General Chemistry.
3. Krannich and Senyk, Study Guide for Ebbing, General Chemistry.
4. Radel/Navidi. Chemistry. Text is available on disk.
5. General Chemistry 1B, Knowledgebase Series. Tutorial Disks installed on the computers in PHY 82.

Laboratory work: The lab will consist of experiments as close and parallel as possible to the material covered in lecture. The student will have to perform all the assigned experiments. 25% of your final grade in this class will come from your lab work. For further information, please refer to the Lab Syllabus written by your lab instructor Mr. D. Kimball.

Lab Research: Starting in April interested students may work on an undergraduate research project. Your lab instructor has to approve this project that you need to propose ahead of time. In the Chem 1B Lab Syllabus you will find many ideas for research, but if you come up with a feasible project of your own, you may use the rest of the semester to work on it during the scheduled lab sessions. Your research has to be finalized with a paper or a poster and a literature study on the subject. If your project receives a passing grade you may skip the last Lab Quiz.

JD/1/6/2000