

General Education Course Proposal

Proposed Course: Chem 1A General Chemistry **Units** 05
Prefix No. Title

Department: Chemistry **School:** Natural Sciences

GE Category (Indicate one category only):

Foundation: A1___; A2___; A3___; B4___
Breadth: B1x; B2___; C1___; C2___; D___; E___
Integration: B___; C___; D___; International/Multicultural___

Existing Course x; **Revised Course** ___; **New Course** ___

Course Included in Current GE Program x

New courses require the Undergraduate Course Proposal form in addition to this form.

Revised courses require the Undergraduate Course Change Request in addition to this form.

Proposed catalog description: Limit course description to 40 words using succinct phrases. Include prerequisites, limitations, lecture/lab hours. Indicate former course number, e.g., (Former Biol 105)

Chem 1A not open to students with credit in Chem 1B. Students with credit in Chem 3A receive only 1 unit of credit. Prerequisites: high school chemistry or physics. General Education Area B4 completed. Fundamental principles of chemistry, including the wave mechanical model of the atom, chemical bonding and structure, valence bond, VSEPR and molecular orbital theory; stoichiometry, thermochemistry, oxidation-reduction, and states of matter. General Education - Breadth, Division B1. (3 lecture, 6 lab hours)* (CAN CHEM 2).

Enrollment limit per section: 120 (Lecture) 20 (Lab)

Expected number of sections per semester - Year 1 3; **Year 3** 3

Attachments:

1. A statement presenting the ways in which this course meets the Specifications provided in the appropriate section of the General Education Policy as well as in the Policies for Inclusion and Evaluation of General Education Courses.
2. A statement of elements common to all sections of this course, identifying content, objectives, required student activities, grading policy, representative texts, and an approximate schedule for the course. Required student activities include such things as papers, research projects, homework, laboratory and/or studio performance, recitations, participation, attendance, and exams.
3. A typical syllabus for a particular offering of the course.
4. Any special cost factors associated with this course.

Approval for Inclusion in General Education

J. Ward 9/2/98
Department Chair Date

Stanley M. Zieg 9/2/98
School Dean Date

Brandt Kehoe 12/2/98
Associate Provost Date

Guamser 9/2/98
School Curriculum Committee Date

Peter ... 12/15/98
General Education Subcommittee Date

Forward Original and TWELVE copies to:
Associate Provost for Academic Affairs, M/S 54

Attachment 2: Elements of the course

Chemistry 1A, General Chemistry
5 units

Semester, Year
Schedule # 12345

Catalog description: Chem 1A not open to students with credit in Chem 1B. Students with credit in Chem 3A receive only 1 unit of credit. Prerequisites: high school chemistry or physics, two years of high school algebra or Math 4R. This course requires GE B4 Math requirement as a prerequisite for credit. Fundamental principles of chemistry, including the wave mechanical model of the atom, chemical bonding and structure, valence bond, VSEPR and molecular orbital theory; stoichiometry, thermochemistry, oxidation-reductions, and states of matter. (3 lecture, 6 lab hours)

General Education: This course meets general education requirements.

Instructor: Name
Office: Instructor's Office
Office hours: Instructors office hours
Phone/e-mail: Instructor's office phone/e-mail address
Dept. Office: Chemistry Office, S-380
Dept. Phone: 278-2103

Textbooks: The following textbooks/software are required/recommended for the course and can be purchased at the Kennel Bookstore.

Fees: There are no fees attached to this course, except lab fees if you break lab equipment.

I. Identifying Content

The following topics are central to most curricula in General Chemistry, and we provide them to our students:

Topic #	Typical Time Spent	Typical Lecture Topics
Topic 1	1 Week	Fundamental Definitions, Pre-chemistry and the Origins of Chemistry, including the phlogiston model of combustion, Scientific Method and Developing a Model, Measurements, Chemical Problem Solving, Uncertainty and Significant Figures
Topic 2	1 Week	Components of Matter: Elements, Compounds, and Mixtures, Early Laws that Established Atomic Theory, the Nuclear Atom, Atomic Theory today, Intro to bonding, Chemical Formulas and Names
Topic 3	1.5 Weeks	Stoichiometry: Mole concept, Formula Determination, Balancing Simple Chemical Reactions, Stoichiometry Theory, Solution Stoichiometry.
Topic 4	1 Weeks	Balancing Reactions, 10 types of Simple Chemical Reactions, Total and Net Ionic Reactions, Redox Reactions
Topic 5	1.5 Weeks	Gas Laws: Gas pressure, Boyle's, Gay-Lussac, Charles', Avogadro's Laws, Ideal and Combined Gas Laws, Dalton's law, Kinetic-Molecular Theory, Real vs Ideal Gases
Topic 6	1 Week	Thermochemistry: Forms of Energy, Heat and Work, Enthalpy, Calorimetry, Heats of reaction, Stoichiometry and Thermochemistry, Hess's Law, Standard Heats of Reactions
Topic 7	1.5 Week	Quantum Theory, Nature of Light, Atomic Spectra, Quantum-Mechanical Model of Atom, Electron Configurations and Periodic Trends
Topic 8	1 Week	Electronic configurations, periodic trends, relationship of configuration to periodicity, connections between atomic structure and chemical reactivity.

Topic 9	1 Week	Models of Chemical Bonding: Ionic and Covalent Bonding, Electronegativity, Lewis Structures
Topic 10	1.5 Week	Molecular Shape: VSEPR Theory, Shape, Polarity and Dipoles, Hybridization, MO Theory
Topic 11	1.5 Week	Liquids and Solids: Intermolecular Forces, Properties of the Liquid State, Properties of the Solid State, Quantitative Aspects of Changes of State, the Uniqueness of Water

Topic #	Time Spent	Typical Laboratory Topics (Th=Theory; TQ=Technique; C=Computation; M=Miscellaneous)
Topic L1	1 Week	% Water in a Hydrate ; then work on Study Guide B, Formula Writing. (Th= Mass conservation; 5; TQ=Use of Balance; C=% water; M=Error Analysis via Spreadsheet)
Topic L2	1 Week	Separating a Mixture, Recrystallization ; Study Guide D, Moles, Molarity (Th= Types of Matter; 5; TQ=Recrystallization; M=Students devise the procedure, requires scientific method)
Topic L3	1 Week	Mass and Volume Measurement (Th=Density, Error; TQ=Use of equipment, graphing, C=Error analysis, M=M=Error Analysis via Spreadsheet)
Topic L4	2 Weeks	Stoichiometry: Analysis By Limiting Reagent (Th=Stoichiometry, Gravimetric analysis; TQ=mass determination, filtration, quantitative transfer; C=Stoichiometry, Error analysis.)
Topic L5	1 Week	Alum From Scrap Aluminum (Th=Stoichiometry, Gravimetric analysis; TQ=mass determination, filtration, quantitative transfer; C=Stoichiometry, %, Error analysis. Real-world application.)
Topic L6	1 Week	Stoichiometry IV: Moles Ratios Determination (Th=Stoichiometry, Gravimetric & volumetric analysis; TQ=filtration, pipetting, mass determination, quantitative transfer; C=Stoichiometry, Graphing, Error analysis.)
Topic L7	.5 Week	Determination of Water Hardness (Th=Stoichiometry, molarity, volumetric analysis; TQ=Titration, dilution; C=Stoichiometry, Dilution, ppm. Real-world application.)
Topic L8	.5 Week	Library Literature assignment
Topic L9	1 Week	Vitamin C analysis (Th=Stoichiometry, molarity, volumetric analysis; TQ=Titration, dilution; C=Stoichiometry, Dilution, ppm. Real-world application.)
Topic L10	1 Week	Gasometric Analysis of Hydrogen Peroxide (Th=Stoichiometry, molarity, volumetric & gasometric analysis; TQ=Gasometric analysis, dilution; C=Stoichiometry, Gas Laws, Dilution. Real-world application.)
Topic L11	1 Week	Molecular Wt. Of a Volatile Liquid (Th=Colligative properties, molality; TQ=Determination of temperature, massing, graphing; C=molar mass from freezing point depression, dilution.)
Topic L12	1 Week	Heat of A Reaction (Th=Thermochemistry, Calorimetry, molarity; TQ=Determination of temperature, massing, graphing; C=Calorimetry calculations)
Topic L13	1 Week	Atomic Spectra (Th=Spectroscopy, Quantum nature of the Atom, Energy; TQ=Spectroscope construction and use; C=Planck's equation, Bragg equation)
Topic L14	1 Week	Oxidation-Reduction Titration (Th=Redox, volumetric analysis, stoichiometry; TQ=volumetric techniques, titration; C=Dilution, molarity, stoichiometry.)
Topic L15	1 Week	Lab Practicals: Each student is given a unique unknown and must analyze it using the theory and many of the techniques they have learned over the semester.

II. Course Objectives

- A) To teach students the fundamental theoretical concepts of General Chemistry, both qualitative and quantitative.
- B) To provide tools and skills to master these fundamental concepts in a variety of applied contexts.
- C) To teach the historical evolution of chemistry as a science, and the scientific method, emphasizing the creation and evaluation of hypotheses, and the criteria chemists use in discriminating among competing theories.
- D) To enable students to relate basic chemistry theory to the real world, to empower them to make informed decisions on a variety of societal issues involving science and technology, and to be aware of the ethical aspects of these decisions.
- E) To provide students with the laboratory skills, techniques, analytical judgment, and mathematical proficiency necessary for them to understand and participate in the process of chemical science.

III. Required Student Activities

A) **Chemistry 1A Laboratory**; meets twice per week @3 hours. Attendance is mandatory. The lab experience is personalized as much as possible with unknowns. The laboratory provides an opportunity to perform experimental chemistry and to relate experimental observation to fundamental principles of chemistry. The laboratory is designed to teach the concepts and techniques of an experimental science. The experiments may also provide significant support for lecture concepts. Write-ups for each laboratory experiment will be extensive, and contributes significantly (80%) to the 2000 word GE writing requirements.

B) **Homework** is a requirement of the course. Students in some sections submit it over the Web, where it is automatically graded, and a key is then provided to students. It counts as 3% of the student's grade. The assignments are robust, usually with 50 or so questions dealing every aspect of the chapter's content. In other sections the instructor assigns questions from the textbook to be handed in.

C) Exams & Grading Policy

The only criterion for grading in this course is performance on exams and in the laboratory, although borderline grades may be raised if evidence of effort is shown (i.e., a consistent record for completing homework and computer tutorials.) Exams in the past have been primarily multiple-choice. With the new GE requirements, we propose having at least one essay question per quiz, test, and Final (see *Writing Requirements*, below).

The course grade is typically determined by the following (the exact breakdown may vary slightly depending on the lecturers' preferences):

1st exam	100 points	(13%)
2nd exam	100 points	(13%)
3rd exam	100 points	(13%)
3 quizzes	100 points	(13%)
Homework	23 points	(03%)
Final exam	207 points	(27%)
Laboratory	<u>140 points</u>	(18%)
Total points:	770 points	

D) Attendance Policy

This policy varies according to lecturer. Most do not require attendance, but one of our instructors has recently instituted required attendance. In this way he can track the students who are cutting excessively, check their grades, and have a chat with them if necessary.

E) Writing Requirement

80 % of the 2000 word Writing Requirement will be fulfilled in the laboratory, and 20% will be fulfilled by a combination of library literature assignments (70%) and lecture assignments and examinations (30%).

In Laboratory: Each experiment will require a pre-lab essay which summarizes the theory, techniques, and procedures of the lab experiment, as well as a post lab essay in which the student describes his or her observations, errors, results and conclusions. Teaching assistants will be required to attend a session to learn how to evaluate these lab essays. Students will be required to submit acceptable essays (which follow the rules of proper syntax, spelling, and grammar) before receiving credit for the experiment.

In the Library Literature Assignment: Students will find popular press articles about a substance "in the news", photocopy it, and summarize its story in a 300-word paper. They will include physical properties about the substance (boiling point, melting point, index of refraction, solubility) which they look up in a reference such as the CRC Handbook. Students are then to find a scholarly journal article about the substance, and photocopy the title page, and the last page which contains references.

Other Writing Assignments: The remainder of the writing assignment will be fulfilled in class by a variety of routes. Typically, essay portions of examinations will constitute the bulk of the requirement, but some lecturers may choose to require essay style homework assignments. These will all be graded not only in terms of content, but in terms of form and style as well.

F) Typical Texts and Other Learning Materials

Text: Chemistry by Silberberg, First Edition

Lab Manual: Experiments for General Chemistry by Burtner, Russell, and Frank

Chemistry 1A Study Guide by Burtner and Russell

Discover Chemistry CD-ROM by Appling and Frank

COURSE INFORMATION CHEM 1A, Spring 1998

Instructor : D. L. Frank

Office Hours: M: 10:00 am - 12:00 noon, 1:00 pm - 4:00 p.m.

Office: MCL 214

Tel: 278-2273

Chem 1A is not open to students with credit in Chem 1B. Students with credit in Chem 3A receive only 1 unit of credit. Prerequisites: high school chemistry or physics, two years of high school algebra or Math 4R. This course requires GE B4 Math requirement as a prerequisite for credit. Fundamental principles of chemistry, including the wave mechanical model of the atom, chemical bonding and structure, valence bond, VSEPR and molecular orbital theory; stoichiometry, thermochemistry, oxidation-reductions, and states of matter. (3 lecture, 6 lab hours)

GENERAL

High school algebra and Chemistry is a prerequisite for this course. **It is unwise to attempt this course without a prior course in Chemistry, in which the basics have been mastered.** Chem 1A is designed for science and engineering majors to teach the fundamentals of chemistry as presented in the lecture, as described in the textbook and as performed in the laboratory.

HOMEWORK

Homework assignments are your best study guides for preparing for the exams. You may purchase the assignments in a bundle from the bookstore or download them from the Web. After doing the problems, you turn in your assignment by using the special Web site in which you select the answers to each question. When you hit the 'Submit' key, your answers are corrected and your score is calculated and recorded. Late homework is still automatically graded, but your score is not used. Homework counts 3% of your grade. The Homework score is calculated with this formula:

$$\# \text{ assignments done on time with a score } > 50\% \text{ divided by } 0.11 = \% \text{ Homework Score}$$

To be given homework credit, you must enter your homework answers on the World Wide Web, using Netscape Navigator 2.02 or higher for the Mac, or NN or Microsoft Explorer for Windows. The URL (address) is <http://www.csufresno.edu/chem/~davidf> You only get one chance at entering the Homework of a given chapter, so be sure to have it completed before you log in, and answer ALL of the questions BEFORE you hit the Submit key. Please note that the answers for each item will be in a different order in the Submission section than on the printed version.

THE LABORATORY

The laboratory provides an opportunity to perform experimental chemistry and to relate experimental observation to fundamental principles of chemistry. The laboratory is designed to teach the concepts and techniques of an experimental science. The experiments may also provide significant support for lecture concepts. **LABORATORY ATTENDANCE IS MANDATORY** because an experiment must be performed to be properly understood. **TWO ABSENCES (NOT MADE UP) IS AN AUTOMATIC F IN THE LABORATORY AND THUS AN F IN THE COURSE.** An unavoidably missed lab may be made up only during the same week the experiment is scheduled and only during another scheduled Chem 3A laboratory in which there is room to work. The laboratory instructor in the make up lab must give permission to work and must sign and date the lab book to verify your attendance in the lab.

EXAMS AND GRADING

Bring with you to all exams

- A. Scantron form #20052 (its color is brown), with your ID number marked into the first 9 lines of the sheet.
- B. A soft lead pencil (#2 or softer) with a good, working eraser
- C. A simple calculator (The Texas Instruments TI-30SLR is cheap, and is powered by light. Batteries have a way of failing just when you need them.) **Only simple function calculators with small rectangular windows are allowed on exams.**

D. **DO NOT BRING** scrap paper or a Periodic Table or paper for the Essay portion of the test. These will be provided to you.

THE ONLY CRITERION FOR GRADING IN THIS COURSE IS PERFORMANCE ON EXAMS AND IN THE LABORATORY, although borderline grades may be raised if evidence of effort is shown (i.e., a consistent record for completing homework and computer tutorials.)

2000 WORD WRITING REQUIREMENT

60 % of the 2000 word Writing Requirement will be fulfilled in the laboratory, 20% will be fulfilled in the library literature assignment, and the remainder in the lecture portion of the course in examinations.

In Laboratory: Each experiment will require a pre-lab essay which summarizes the theory, techniques, and procedures of the lab experiment, as well as a post lab essay in which you will describe your observations, errors, results and conclusions. You will be required to submit acceptable essays (which follow the rules of proper syntax, spelling, and grammar) before receiving credit for the experiment.

In the Library Literature Assignment: You will find popular press articles about a substance “in the news”, photocopy it, and summarize its story in a 300-word paper. You will include physical properties about the substance (boiling point, melting point, index of refraction, solubility) which you will look up in a reference such as the CRC Handbook. You are then to find a scholarly journal article about the substance, and photocopy the title page, and the last page which contains references. The paper will be graded by your laboratory teaching assistants, using the same criteria used for the lab reports..

In Lecture: For each of the three exams and the final, a 100 word essay question will be given. Credit for the question will not only depend upon the question being correctly answered, but also the quality of the expression.

DISABLED STUDENTS

This class conforms to University policy for disabled students. Please see the Catalog and Schedule of Courses for this policy.

The course grade is determined by the following:

1st exam	100 points	(13%)
2nd exam	100 points	(13%)
3rd exam	100 points	(13%)
3 quizzes	100 points	(13%)
Homework	23 points	(03%)
Final exam	207 points	(27%)
Laboratory**	<u>140 points</u>	(18%)
Total points:	770 points	

Tentative grade scale for the three hour exams (in %):

100 A 87 A-B Border 85 B 73 B-C Border 70 C 53 C-D Border 50 D 43 D-F Border 40 F

****Infrequently a lab TA will not turn in grades, or will turn in grades which do not distinguish among students' chemistry competence (i.e., almost everyone has received an "A" or "B"). In these situations the laboratory grade shall not be used in the calculation of a final grade.**

NO MAKE UP EXAMS WILL BE GIVEN FOR ANY REASON OTHER THAN AT THE TIME OF THE FINAL.

In situations where a student's total average score including lab is borderline, and is significantly higher (more than 2% points) than the lecture score average without lab, the instructor will place more emphasis on the lecture grade average in awarding a final grade.

Incomplete Grades: An incomplete grade (I) can be given only if a student has a passing grade in all work completed in the course **AND** has completed at least two-thirds of the course work **AND** presents to the instructor complete written documentation of the reason(s) for requesting the incomplete. Incomplete grades are rarely given and only for fully justified reasons.

A LONG STANDING DEPARTMENTAL POLICY CONSIDERS AN F IN EITHER LECTURE OR LABORATORY TO BE AN F IN THE COURSE. IF EITHER LECTURE OR LABORATORY IS FAILED, THE ENTIRE COURSE MUST BE REPEATED.

HELP

If you are having difficulty with the material in this course, GET HELP immediately from one or more of the following sources.

1. See me during office hours, or make an appointment. I want to see all students who get either 'F' or 'D' on any exam.
2. Attend the Chem Dept (free) tutorial sessions at the announced times.
3. Get tutorial help from the Office of Tutorial Services located in the Lab School (no charge for this service).
4. Get a tutor from a list in the Chem Dept Office (NS 380). These tutors charge for their services.
5. Form a study group, or see me to help you get one going. They are the absolute BEST way to get your grades up.



CHEATING POLICY

This class conforms to the University Policy on Cheating and Plagiarism. Students are advised to read the Policy in the General Catalog and Schedule of Courses. Incidents of cheating are usually reported to the Dean of Student Affairs, and may become part of your permanent University records. The most minimal consequence of cheating is failure of the course; administrative actions involve probation, suspension and expulsion from the University.

CHEM 1A LECTURE SCHEDULE

Text: "Chemistry" by Silberberg, First Edition
 Lab Manual: Microscale Experiments for General Chemistry
 by Williamson & Little
 Chemistry 1A Study Guide by Burtner and Russell

Spring 1998
 Dr. David L. Frank

Week	Date	Chapter	Subjects
1	Jan 27 & Jan 29	1 1	Chap. 1: Keys To Study Chem. (Selected homework problems Due 2/3 by 4:00 p.m.)
2	Feb 3 Feb 5	2 2	Chpt. 2: Components of Matter (Selected homework problems Due 2/9 by 4:00 p.m.)
3	Feb 10 & Feb 12	Quiz 1 3	Quiz on Chpts 1 & 2; then Chpt 3: Stoichiometry. (Selected homework problems Due 2/19 by 4:00 p.m.)
4	Feb 17 Feb 19	3 4	Finish Chpt 3 Classes of Chemical Reactions. (Selected homework problems Due 3/2 by 4:00 p.m.)
	Feb 23	Note	LAST DAY TO DROP - without "W" listed on transcript
5	Feb 24 Feb 26	4 4 & 5?	Continue Chpt 4 . Finish Chpt 4; if time, begin 5
6	Mar 3 Mar 5	1st Exam 5	Chapters 1-4 <i>Bring Scantron #20052, #2 pencil & calc.</i> Chpt 5, Gases (Selected homework problems Due 3/12 by 4:00 p.m.)
7	Mar 10 Mar 12	5 6	Finish Chpt. 5 Chapt 6, Thermochemistry. Omit Sec. 6.3 (Selected homework problems Due 3/18 by 4:00 p.m.)
8	Mar 17 Mar 19	6 Quiz 2	Continue 6 20 min quiz on Chapters 5 and some of 6, then finish 6
9	Mar 24 Mar 26	7 7&8	Quantum Theory & Atomic Structure (Selected homework problems Due 4/1 by 4:00 p.m.) Begin Chpt 8: Electron Configuration & Periodicity (Selected homework problems Due 4/1 by 4:00 p.m.)
10	Mar 31 Apr 2	7&8 2nd Exam	Finish Chapters 7 & 8 Chapters 5 - 8
	Apr 6-10	No Class	Spring Vacation
11	Apr 14 Apr 16	9 9	Begin Chpt 9: Bonding: General Concepts (Selected homework problems Due 4/21 by 4:00 p.m.)
	Fri. 4/17	Note	LAST DAY to DROP for "serious & compelling reason"
12	Apr 21 & Apr 23	10 10	Chpt 10: Molecular Shapes (Selected homework problems Due 4/27 by 4:00 p.m.) Finish Chpt. 10
13	Apr 28 & Apr 30	Quiz 3, 11 11	Quiz on 9 & 10, then Begin Chpt. 11: Liquids & Solids (Selected homework problems Due 5/11 by 4:00 p.m.)
14	May 5 May 7	11 Review	Finish Chpt 11 Evaluations & Review
15	May 12	3rd Exam	CHAPTERS 9-11

Final exam required for all students:

Tuesday, May 19, 1998 from 1:00 pm to 3:00 pm, Room MCI 161

Chemistry 1A Laboratory Schedule
Spring 1998

Lab Manual: Microscale Experiments For General Chemistry by Williamson & Little

Lab Study Guides: Chem 1A Study Guides by Russell and Burtner

Lab Coordinator: D. Frank, McL 214, 278-2273

Week	Week of	1 st or 2 nd lab	Assignment
1	Jan 26	1 2	Discussion of Lab Safety, Policies & Grading, Study Guide A Check-In to individual lockers, Study Guides B and C (in C, omit "Propagation of Error and Precision" and attendant item 4 on Report Sheet SG-C-2)
2	Feb 2	1 2	Exp. 1: Observing a Chemical Reaction Exp. 2 Densities of Organic Liquids
3	Feb 9	1 2	Experiment 3: Separation of a Mixture Study Guide D: Formula Writing. As Time Permits: Silberberg Chpt 1 Problems(pp35-37) 26-39,43-46, 65-69.
4	Feb 16	1 2	Quiz 1 and Experiment 4: Crystallization and Study Guide E: Moles and Study Guide G: Stoichiometry
5	Feb 23	1 2	Experiment 6: Solutions. Study Guide F: Equations and Equation Writing
6	Mar 2	1 2	Experiment 7: Isolation of Silver in a Dime Quiz 2 and Study Guide H: Net Ionic Equations
7	Mar 9	1 2	Experiment 9: Analysis of Copper Oxide Complete Exp. 9, then Recitation Section: Gases Silberberg Chpt 5, Problems pp 214-217 (do assorted problems 5-82, check answers)
8	Mar 16	1 2	Experiment 18: Molar Volume of a Gas Study Guide I: Inorganic Nomenclature, then Silberberg problems pp 249-253
9	Mar 23	1 2	Experiment 8: Synthesis of MnCl ₂ Quiz 3 Library Orientation, Literature Search, Study Guide L (Meet in the Library)
10	Mar 30	1 2	Experiment 21: Conc of H ₂ O ₂ (A Practice Lab Practical Exam) and Complete 21, then Silberberg problems pp 283-285 & 321-323
11	Apr 13	1 2	Experiment 24: Calorimetry, Part I Experiment 24: Part II and Quiz 4
12	Apr 20	1 2	Experiment 10: Gravimetric Determination of Cl ⁻ Ion Experiment 31: Analysis of Commercial Vinegar
13	Apr 27	1 2	Experiment 35, Part I only. Study Guide J; Lab Practical Exams distributed and questions about them answered.
14	May 4	1 2	Lab Practical #1 Lab Practical #2
15	May 11	1	Quiz 5 and Check Out

Chemistry 1A Lab Policies

1. *Grading*

Your lab semester grade generally accounts for about 18% of your final Chemistry 1A course grade.

The laboratory provides an opportunity to perform experimental chemistry and to relate experimental observation to fundamental principles of chemistry. The laboratory is designed to teach the concepts and techniques of an experimental science. The experiments will also provide significant support for lecture concepts. **LABORATORY ATTENDANCE IS MANDATORY** since an experiment must be performed to be properly understood. **TWO ABSENCES (NOT MADE UP) IS AN AUTOMATIC F IN THE LABORATORY AND THUS AN F IN THE COURSE.** An unavoidably missed lab may be made up only during the same week the experiment is scheduled and only during another scheduled Chem 1A laboratory in which there is room to work. The laboratory instructor in the make up lab must give permission to work and must sign and date the lab book to verify your attendance in the lab.

Grade breakdown:

Quizzes:	25%
Prelab Writeups	10%
Experiment Results & Write-Ups	35%
Lab Practical FINAL EXAM	20%
Instructor's Evaluation:	10%

The 20% allocated to Experiments includes preparation for that laboratory, your experimental technique, unknowns, and write-up.

2. *Safety Glasses*

If your instructor discovers that you are not wearing your safety glasses, you will be excused from the experiment and be given a 0% for that experiment.

3. *Individual Experiments*

All experiments are to be done individually unless the lab instructor announces otherwise.

4. *Attendance*

Attendance is taken when you turn in your experimental write-up for checking. You will be asked to correct the items which need correcting. When the write-up is satisfactory and you can answer relevant questions about it, demonstrating that you actually understand what you have done, then, and only then, will attendance credit be given and you can leave. Otherwise you are expected to remain in lab for the duration of the 3 hours that the lab is scheduled. If you leave lab early (without demonstrating your understanding of the experiment or the study guide) then attendance credit is not given. Remember: **only two missing attendance credits will result in an F for the course, not just for the lab.**

5. *Cheating Policy*

This class conforms to the University Policy on Cheating and Plagiarism. Students are advised to read the Policy in the General Catalog and Schedule of Courses. Incidents of cheating are usually reported to the Dean of Student Affairs, and may become part of your permanent University records. The most minimal consequence of cheating is failure of the course; administrative actions involve probation, suspension and expulsion from the University.