

INTRODUCTION TO CHEMISTRY 1 SC 174A
CLASS POLICY AND ORIENTATION
Fall 2004

Iowa Lakes Community College
300 S. 18th St
Estherville, IA 51334

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MEETING TIMES AND PLACES:

Virtual 24/7

Catalog Description:

This is an introductory chemistry course which will provide a survey of general and inorganic chemistry. During the course of the semester we will cover: matter; measurements; atoms, molecules, and ions; formulas and equations; stoichiometry; atomic structure and bonding; nomenclature; gases and the gas laws; water and solutions; acids and bases; oxidation and reduction; chemical equilibrium; and nuclear chemistry. Lecture and Lab.

This is not a self-paced course. You are free to work ahead, but you must at least keep up with the schedule. When you send an email I will try to answer all questions within a 48 hour period.

Prerequisites: None

Credits: 4

Text & Additional Materials:

REQUIRED TEXT:

Denniston, Topping, and Caret 2004. General, Organic, and Biochemistry 4th ed McGraw-Hill.

ADDITIONAL REQUIRED EQUIPMENT:

Calculator with scientific functions
Metric Ruler
Laboratory Goggles (Goggles are available at most stores)
Various materials as needed for labs
ChemLab v 2.0 Standard software ([Virtual Lab is Available here](#))

Course Objectives/Competencies:

LEARNING OBJECTIVES AND COMPETENCIES

Upon completion of this course the student will be able to:

1. Make measurements and calculations using scientific methodology.
2. Describe the scientific theory and state how it is the driving force behind chemistry.
3. Describe the relationships between Atoms, Molecules, and ions.
4. State the general rules and use the rules of formulas, equations and stoichiometry
5. State the general concepts of atomic structure and bonding.

6. Describe the rules for determining Lewis Structures and VSEPR structures for various molecules and compounds
7. Be able to describe and use the rules of chemical nomenclature .
8. Describe the behavior of gases and the Gas Laws.
9. Describe the characteristics of water and solutions and how these characteristics are important.
10. Describe the general characteristics of acids and bases.
11. Work with oxidation and reduction reactions.
12. Describe chemical equilibrium and state the importance of equilibrium.
13. Search the literature to find relevant information on a current topic in chemistry and put the information together into a coherent, written format for presentation.

Course Schedule/Outline (Units of Instruction):

This course schedule of Due Dates needs to be adhered to strictly. There will be no exceptions. Do not allow yourself to fall behind. Please note that these dates are closing dates (due dates). You can access the material from the first day. This schedule is only to keep you on schedule. You are free to progress through the course as quickly as you would like. Please note that the due date is as of 12:00 midnight Central Standard Time.

Unit 1 - Chapter 1 – Quiz 1, Lab activity 1, and threaded discussion 1—Sept 12, 2004

Unit 2 - Chapter 2 – Quiz 2, Lab activity 2, and threaded discussion 2—Sept 12, 2004

Unit 3 - Chapter 3 – Quiz 3, Lab activity 3, and threaded discussion 3—Sept 22, 2004

Unit 4 - Chapter 4 – Quiz 4, Lab activity 4, and threaded discussion 4—Oct 2, 2004

Unit 5 - Chapter 5 – Quiz 5, Lab activity 5, and threaded discussion 5—Oct 12, 2004

Midterm Exam Units 1-5 Covers Chapters 1-5 Oct 14 2004

Unit 6 - Chapter 6 – Quiz 6, Lab activity 6, and threaded discussion 6—Oct 25, 2004

Term Paper Rough Draft – Nov 1, 2004

Unit 7 - Chapter 7 – Quiz 7, Lab activity 7 and threaded discussion 7 – Nov 4, 2004.

Unit 8 - Chapter 8 – Quiz 8, Lab activity 8, and threaded discussion 8 – Nov 14, 2004

Unit 9 - Chapter 9 – Quiz 9, Lab activity 9, and threaded discussion 9 – Nov 24, 2004

Term Paper – Dec 1, 2004

Unit 10 – Chapter 10 – Quiz 10, Lab Activity 10, and Threaded Discussion 10 – Dec 4, 2004

Final Exam—Dec 8, 2004 (Comprehensive)

LECTURE SCHEDULE (This should be viewed as a rough guide and not a hard and fast schedule)

Topic	Text chapters
Chemistry: Methods and Measurement	1
The Composition and Structure of the Atom	2
Elements, Atoms, Ions, and the Periodic Table	3
Structure and Properties of Ionic and Covalent Compounds	4
Calculations and the Chemical Equation	5
States of Matter: Gases, Liquids, and Solids	6
Reactions and Solutions	7
Chemical and Physical Change: Energy, Rate, and Equilibrium	8
Charge-Transfer Reactions: Acids and Bases and Oxidation-Reduction	9
The Nucleus, Radioactivity, and Nuclear Medicine	10

Laboratory Schedule

These labs are from the Chem Lab software package and also from the web page.

- 1 Generic Lab and Balance Lab (ChemLab)
 Density (From Web Page)
- 2 Bond Lab (ChemLab)
 Expansion of Water as it Freezes (From Web Page)
- 3 Atomic Weight of Magnesium (ChemLab)
 Rust (From Web Page)
- 4 Volumetric Analysis of Chloride (ChemLab)
- 5 Volumetric Analysis of Copper (II) Sulfate (ChemLab)
 Latent Heat (From Web Page)
- 6 Dumas Method (Ideal Gas Law) (ChemLab)

- Volume of a Gas & Temperature (From Web Page)
- 7 Crude Oil Distillation (Chemlab)
- Solutions (From Web Page)
- 8 Cation and Anion Reaction (ChemLab)
- Temperature and the Rate of a Chemical Reaction (From Web Page)
- 9 Acid Base Titration (ChemLab)
- Testing for an Acid (From Web Page)
- 10 No lab activity
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Methods of Instruction: (For example: lab work, speakers, text assignments, and so on)

A variety of teaching methods shall be employed including Powerpoint-based lectures, threaded discussions, laboratory work, and library research. Student participation is expected in all activities.

Grading Policies:

Scale:	A = 90 – 100%
	B = 80 - 89.99999999%
	C = 70 - 79.99999999%
	D = 60 – 69.99999999%
	F = 0.0 – 59.99999999%

(Description of each gradable item):

(Point value/Percentage value of each item):

Makeup Policy:

Other Expectations: (For example: classroom behavior, usage of lab)

COURSE POLICIES:

1. All communications must use good grammar and good etiquette. All caps or all small letters are not appropriate means of communication in academics. Likewise, contractions, which are popular, also have no place in academic communications.
2. Quizzes: Short quizzes will be given throughout the course. Missed quizzes cannot be made up. Quizzes are timed with 20 minutes allowed for each quiz. You are allowed to retake the quizzes once for points. 1 point will be deducted for each minute over the time limit.
3. Homework/assignments: In order to master the concepts of chemical science, one needs to spend time reading and studying the text, and answering the study questions. The student should work enough questions to master the material. The instructor will review any questions with the student if desired.
4. Laboratory: Laboratory activities are assigned to students to accompany the course. The laboratories are an important integral component of the course for 2

reasons: actively performing these activities gives you hands on practice in physical science and most Universities want lab components for science courses. The laboratory assignments will be due on or before the closing of the quiz for that unit. Once the activity is completed you need to turn in a brief writeup (1-2 paragraphs is probably sufficient) and included answers to the questions. Be sure to format all papers either in Microsoft Word or in Rich Text Format .rtf.

5. Examinations: There will be a midterm exam and a final exam. Exams will cover material from the lectures, the text, and the labs. Students are responsible for material whether covered in the book or in the lecture. Everything that I cover will not be in your book and I will not cover everything in your book. The final exam will be comprehensive, as will be the midterm exam. Exams will cover material from the lectures, the text, and the labs. Exams will consist of multiple choice and true/false questions. Exams are timed.
6. Term paper: A term paper on some topic in the chemical sciences will be required. Any standard format and citation system is acceptable as long as it is used properly and consistently. Students will be required to write a paper on a particular area of chemical science. There are many new and exciting areas of research in Chemistry. This should be on a specific topic you find interesting. In 6-12 double-spaced computer printer pages - excluding figures and all necessary graphs and use at least 6 references, three of which must be non-internet references. (see handout for specifics). Type size can be no more than 12 point. All papers will be submitted electronically and returned electronically. A rough draft of the paper will be due on or before 1 Nov 2004, with the final paper due on or before 1 Dec 2004. Papers must be submitted Electronically. The term papers must be submitted to the drop box. Be sure to format all papers either in Microsoft Word or in Rich Text Format .rtf.

The rough draft is worth a total of 25 points and the final term paper is worth 200 points. What I am looking for in the rough draft is an indication of research and also of writing. It should at the least include the following:

2 pages written material, including citations to the resources listed in the bibliography.

Bibliography (list of resources used)

You should check the writing paper on the web site for more details.

7. Format for assignments put in the drop box: All assignments must be deposited in the appropriate drop box on or before the due date. Since these will be dropped the following format MUST be followed. You must name your paper descriptively ie. "your name intro to chem term paper.doc", and not just "term paper.doc". Also, when depositing documents, do not deposit one assignment as multiple files, I will not put them together for you. Make sure they are sent as one file. Likewise, each individual assignment needs to have its own file. Each of these activities needs to be in its own file.
8. Format for email: In the subject line of the email you must include your name, the class the submission is for, and the assignment. Also, when submitting documents, do not submit one assignment as multiple files, I will not put them together for you. Make sure they are sent as one file. Be sure to format all papers

either in Microsoft Word or in Rich Text Format .rtf.

When you send me an email, also make sure that all pervious email messages remain attached. This helps to ensure that there are no misunderstandings in the conversation as we can both go back and retrace what we were thinking about when the conversation was proceeding.

9. Threaded discussions: Each student must post a minimum of 3 times to each units threaded discussion prior to the close of the quiz (see syllabus for exact date). This post must be coursework related and must be a minimum of 3 paragraphs. 2 of these posts must be original (2 points each) and 1 can be either original or a response to another post. Please note that the threaded discussions are intended for dialogue between students during the unit. That is why they close with the unit. I will award no credit for posts left after the close of the unit.
10. **Late Assignments:** Assignments are only accepted on the day due. If a student has a legitimate, verifiable reason to turn in an assignment late it may be accepted depending upon the circumstances. Instructor may accept papers late, but with reduced points earned for those papers.
11. Format for Papers: All papers turned in for this class will be typed, double-spaced. No larger than 12 point font and margins all 1 inch all the way around. All assignments must be emailed to the instructor.
12. Format for electronically submitted papers. All papers must be submitted in Rich Text Format (rtf). This allows any program to read it. The papers must all be 1 inch margins, double spaced and not larger that 12 point font.
13. **Academic Dishonesty Policy:** Any student engaging in an act of **academic dishonesty**, including but not limited to: cheating on exams, copying problem sets, copying or duplicating lab reports, falsifying lab data, will receive a **grade of zero** for the work on which the offense was committed and will be reported for appropriate action.
14. Grading of the term paper:

Term Paper Grading

Content - 100 possible

- A. Does it cover the subject sufficiently.
- B. Is it easy to follow in how the transitions are put together.

Bibliography - 20 points possible

- A. Correct format.
- B. Proper number of sources.
 1. Minimum 6 sources.
 2. 3 non-internet sources.

Citations - 40 points possible

- A. Is it always clear where the information came from.
- B. Are citations liberal enough to clarify what is the students idea and what came from one of the sources.

Length - 20 points possible

- A. Minumum 6 pages, excluding bibliography and cover page.

Mechanics - 20 points possible

- A. No larger than 12 point font.

B. 1 inch margins all around

C. Does it flow well enough to follow what was written easily.

Total Points 200

**Students must abide by all policies as stated in the
Iowa Lakes Community College Student Handbook.**

STUDENT ACADEMIC HONESTY POLICY

Iowa Lakes Community College believes that personal integrity and academic honesty are fundamental to scholarship. Iowa Lakes strives to create an environment where the dignity of each person is recognized and an atmosphere of mutual trust exists between instructors and students. The faculty have confidence in the integrity of the students and encourage students to exercise good judgment in fulfilling this responsibility.

Actions contrary to academic integrity will not be tolerated. Activities that have the effect or intention of interfering with learning or fair evaluation of a student's work or performance are considered a breach of academic integrity. Examples of such unacceptable activities include, but are not limited to:

- **Cheating** (intentionally using or attempting to use unauthorized material, assistance or study aids in my academic work). For example, using a cheat sheet for a test, looking at another student's paper during an exam, stealing or buying all or parts of an exam or paper, altering and resubmitting work for a better grade without prior approval to do so, etc.
- **Plagiarism** (representing another's ideas, words, expressions or data in writing or presentation without giving proper credit, failing to cite a reference or failing to use proper documentation, using works of another gained over the Internet and submitted as one's own work).
- **Falsification and/or misrepresentation of data** (submitting contrived or made-up information in any academic exercise). For example, making up data, citing non-existent sources, etc.
- **Facilitating Academic Dishonesty** (knowingly helping or attempting to help another violate any provision of the academic honesty policy). For example, working together on a take-home exam or other assignment when the option has not been made available, giving a paper/assignment to another student for his/her use, etc.
- **Multiple Submissions** (submitting, without prior approval from the instructor involved, any work submitted to fulfill academic requirements in another class). For example, submitting the same paper for two different classes, etc.
- **Unfair Advantage** (trying to gain unauthorized advantage over fellow students). For example, gaining or facilitating unauthorized access to exam materials (past or present); interfering with another student's efforts in an academic exercise; lying about the need for an extension on a paper or assignment; destroying, hiding, removing or keeping library materials, etc.

Disciplinary Action

Any violation of this policy will be treated as a serious matter. The instructor has primary responsibility over classroom behavior and maintaining academic integrity. Depending on the nature and severity of the offense, Iowa Lakes Community College reserves the right to exercise disciplinary action as outlined in the Disciplinary Action Section of the Student Handbook.

Americans with Disabilities Act – Policy of Nondiscrimination

It is Iowa Lakes Community College policy to not discriminate against qualified individuals with disabilities and to provide reasonable accommodation(s), as required by law, to otherwise qualified applicants for admission or to students with disabilities in all education programs, activities, services and practices, including application procedures, admissions, course selection, the awarding of degrees, discipline and dismissal. Educational opportunities will not be denied to an otherwise qualified application or student because of the need to make reasonable accommodation(s) or modification(s) for the physical and mental impairment(s) of any such individual.

Iowa Lakes Community College students needing reasonable accommodation(s) and/or modification(s) should contact Linda Helmers by phone at (712) 852-5216 or (712) 362-8364 or via email at lhelmers@iowlakes.edu. To assure that accommodation(s) and/or modification(s) will be ready when classes start, students must make the request as soon as possible, before a semester begins.

It is the policy of Iowa Lakes Community College not to discriminate on the basis of sex, race, national origin, creed, age, marital status or disability in its education programs, activities, or employment policies, as required by Titles VI and VII of the 1964 Civil Rights Act, Title IX of the 1972 Educational Amendments, Section 504 of the Federal Rehabilitation Act of 1973 and Title II of the Americans with Disabilities Act (ADA) of 1990.

Inquiries regarding compliance with Title IX, Title VI, Title VII, or Section 504 may be directed to Kathy Muller, Human Resources, Iowa Lakes Community College, 19 S. Seventh Street, Estherville, IA 51334, telephone (712)362-0433; to the Director of the Iowa Civil Rights Commission, Des Moines; or to the Director of the Region VII Office of Civil Rights, Department of Education, Kansas City, Missouri.