

LAKE TAHOE COMMUNITY COLLEGE

CHM 102 – General Chemistry II

<http://www.ltcconline.net/wallace/>

Winter 2009

REVISED Jan. 6, 2009

LECTURE:	sections 1 & 3:	M & W	11:00am-12:50pm	A-208	(Wallace)
LABORATORY:	section 1 (102.1):	Tu & Th	3:30-5:50pm	D-103	(Wallace)
	section 3 (102.3):	Tu & Th	9:35-11:55am	D-103	(Oleson)

I. INSTRUCTORS: **Martin Wallace**, M.S. Chemistry & Chemistry Education
(530)541-4660, ext 284; Wallace@LTCC.edu; office: D-105
Millie Oleson, B.S. Chemistry
(530)541-4660, ext 704; Oleson@LTCC.edu

OFFICE HOURS: M & W 10-11am; Tu & Th 2-3:30pm; *and by appointment*

II. PREREQUISITES: CHM 101 with a "C" or better or equivalent

III. REQUIRED MATERIALS:

TEXT: *Chemistry, 7th ed.*, Zumdahl & Zumdahl,
ISBN 10: 0-618-52844-X ~or~ 0-547-05405-X
ISBN 13: 978-0-618-52844-8 ~or~ 978-0-547-05405-6

LAB MANUAL: *Chemical Principles in the Laboratory, 8th ed.*, © 2005
Slowinski, Wolsey, & Masterton

- ISBN 0-534-42453-8
- about \$110 new; possible "used" copies at lower prices
- available online only (?); not in LTCC bookstore
- good for CHM 101, 102, *and* 103

~or~ *Chemical Principles in the Laboratory, 9th ed.*, © 2009
Slowinski & Wolsey

- ISBN 0-534-42453-8 ~or~ 978-0-495-11288-4
- about \$110 new; "used" copies probably not readily available
- available online and through major booksellers (?)
- good for CHM 101, 102, *and* 103

~or~ *Laboratory Manual General Chemistry CHM 102*, © 2008
Slowinski, Wolsey & Masterton

- ISBN 0-495-83073-9 ~or~ 978-0-495-83073-0
- about \$35 new; "used" copies probably not available
- only available in the LTCC bookstore
- good for *CHM 102 only*

SAFETY GOGGLES: must have (1) indirect venting, and (2) ANSI Z87.1 impact protection
The Uvex "Stealth" (Uvex #S-3960) meets these requirements, is reasonably comfortable and durable, and costs about \$15. These can be purchased at the LTCC bookstore and from other retailers.

CALCULATOR: You will need a simple scientific calculator. Basic models can be purchased at office supply stores for about \$10-\$15. See me if you have any questions.
Programmable calculators cannot be used during quizzes or exams.

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IV. STUDENT LEARNING OUTCOMES:

As evidenced by a final examination, CHM102, students will be able to:

1. Compare and contrast different types of solids in terms of bonding and physical properties.
2. Perform calculations associated with colligative properties of solutions.
3. Determine the rate law for a chemical reaction given experimental data; propose possible reaction mechanisms from the rate law.
4. Calculate equilibrium constants from experimental data; use equilibrium constants to calculate pressure and/or concentrations of reactants and products; describe qualitative changes in pressures and/or concentrations due to changes in equilibrium conditions.
5. Identify compounds or ions as bases or acids; calculate the pH of weak or strong acids and bases, including salts.
6. Identify buffer solutions; calculate buffering capacity and pH for buffer solutions and mixtures of acids and bases during titration.
7. Calculate changes in entropy, enthalpy and Gibb's Free Energy associated with chemical reactions and physical changes; predict spontaneity of chemical reactions and physical changes from these calculations.
8. Calculate cell potentials for coupled oxidation-reduction reactions; identify oxidation reaction, reduction reaction, anode and cathode (especially in terms of battery components); find the change in Gibb's Free Energy from the cell potential calculations.

V. ACCOMODATIONS FOR STUDENTS WITH DISABILITIES:

Lake Tahoe Community College and I are committed to accommodating students with disabilities. The Disability Resource Center (DRC, room A-205, ext. 249) facilitates accommodations for learning, psychological, hearing, visual and communication disabilities as well as health disorders and mobility limitations. Students requesting any special services should contact the DRC.

VI. SCHEDULE

Lecture Topics, Quizzes, & Exams

I am *planning* to cover chapters 10-17 in the text; we may not cover 100% of this. A (constantly updated) class schedule that includes lab experiments, lecture topics, quiz and exam dates can be found at:

<http://www.ltconline.net/wallace/>

Exam Dates

Exam #1* (ch. 10-12)	Tuesday, February 3
Exam #2* (ch. 13-15)	Tuesday, March 3
Final Exam (ch. 10-17)	Monday, March 23 @ 10:00-11:50am

* *The midterm exam dates are tentative.*

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VI. SCHEDULE (*continued*)

Notes regarding missed exams:

Makeup exams will only be given for "serious and compelling reasons"; see me immediately if you miss - or are going to miss - an exam. Serious and compelling reasons for making up an exam include situations like illness or hospitalization, family emergencies, serious accidents, etc. Your makeup exam score will be no higher than the average of your other exam scores.

Other Important Dates:

Last day to drop classes and receive a refund Friday, January 16
Last day to drop with no record Friday, January 30
Last day to drop with a "W" grade Friday, February 20

Other VERY Important Dates:

Martin Luther King Holiday, campus closed Monday, January 19
Washington's Birthday Holiday, campus closed..... Monday, February 16

VII. GRADING

Approximate Overall Point Breakdown

Exams (2 @ 100 points each)	200
Final Exam (2/3 comprehensive; 1/3 latest material; multiple-choice).....	100
Quizzes* (~7 @ 20 points each; lowest score dropped).....	~120
Laboratory* (~10 @ 10 points each; lowest score dropped)	~90
Practice Exercises* (~8 sets @ 10 points each; lowest score dropped)	~70
TOTAL	(APPROXIMATELY) 580

*The total number of quizzes, experiments, and/or practice exercise sets may vary by about ± 1 .

Overall Grading Scale; from the total points possible this quarter:

A (90.0–100%), B (80.0–89.9%), C (70.0–79.9%), D (60.0–69.9%), F (<60.0%)

Students that earn the top 3 grades in the class on the final exam will be assigned a grade of "A" for the course overall, regardless of their earlier grades in the class.

Quizzes

Each quiz will be worth 20 points. Your lowest quiz score for the quarter will be "dropped".

Practice Exercise Sets ("Homework")

Each chapter set of practice exercises will be worth 10 points (pro-rated for all exercises in that chapter). Grading will be semi-honor system and based on the number of exercises completed in that chapter; I will explain this in greater detail later. The lowest "homework" score will be dropped.

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VII. GRADING (*continued*)

Laboratory Reports

Your laboratory instructor may provide their own syllabus and/or laboratory policy/policies that may be different from those listed in this syllabus. If your lab instructor does not provide their own policies, these apply.

Each lab report will be worth 10 points. Your lowest lab report grade for the quarter will be “dropped”.

Each lab report is worth 10 pts (max.) and will be graded on the following basis:

A **10-point** Lab Report will have the following attributes:

1. extra effort and high-level thought are evident throughout
 2. proper significant figures are used throughout
 3. proper units are used throughout
 4. calculations are shown
 5. calculated results are correct
 6. answers are correct (or at least reasonable); “unknowns” are correctly identified (*2 points*)
 7. unreasonable results are noted and an explanation is attempted
 8. conclusions logically follow from experimental results
 9. lab procedures have been followed exactly
 10. written answers are detailed and thorough; complete sentences are used; work is legible
 11. student name, course number, section number, date, etc. is included on each page
 12. report is turned in on either original lab manual pages (cut or torn neatly from the book) OR photocopied pages from the manual
 13. only the pages that are clearly meant to be included are included with the final report; introductory text is NOT included with the final report
- In general, 1 point will be deducted from the 10 points for each error or omission listed above.
 - A complete lab report, no matter how many errors, will be assigned a minimum of 6 points.
 - **Zero points** will be assigned to laboratory reports that are substantially incomplete.
 - ***Students who arrive late to their scheduled lab meeting will have the following points deducted from that week's lab report: 1st offense = -0 points, 2nd offense = -1 point, 3rd offense = -2 points...***

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VIII. POLICIES, DEFINITIONS, & ADDITIONAL DETAILS

Tips for success in this class

1. Form small study groups and work together to master this material.
2. Work on this class a little bit every day. Spend at least 1 hour per day doing some combination of the following: reading the text, reviewing your notes, working study problems, studying with classmates, and/or meeting with your instructor.
3. Read the text and work example problems before attempting assigned homework problems.
4. Stay ahead of the lecture with your reading.
5. Complete and turn in every item that has a point value: lab reports, quizzes, exams, etc.
6. Participate in the lectures and ask questions.
7. Be honest with others and yourself. If you really hate this kind of work, don't complain or cheat, but instead find something that you do like to do. Life is too short to be miserable.

Practice Exercise Sets ("Homework")

"Homework" problems will be collected about every 10 days; each exercise set will consist of the problems assigned for that chapter. The assigned problems and due dates will be listed on the class schedule; follow the CHM102 link from:

<http://www.ltconline.net/wallace/>

I have placed a copy of the complete solutions guide for our text on reserve in the library.

Quizzes

Chemistry is most successfully tackled in small, regular bites through continuous studying; for most students, "cramming" immediately before an exam is not effective. Therefore, most weeks you'll be given a brief quiz. Quizzes will usually be administered at the beginning of your lab period on Thursdays. The quiz topics will be the items covered in the previous week's lecture; I will explicitly indicate the text sections associated with each quiz via the class Web page. You will be allowed 300 minutes to complete each quiz. **If you arrive late to lab, you will NOT be given more time to work on your quiz. You may not use programmable calculators during exams or quizzes.**

Exams

Exams will be administered during one of the lab meetings during the week scheduled. You will be given 2 hours and 15 minutes (the full laboratory meeting time) to complete each exam. Exams will be closed-notes, closed-text, but I will provide you with a periodic table, constants, and some formulas. **You may not use programmable calculators during exams or quizzes.**

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Laboratory Policies & Safety

Your laboratory instructor may provide their own syllabus and/or laboratory grading policy/policies that may be different from those listed in this syllabus. If your lab instructor does not provide their own policies, these apply.

We will review safety, policies & procedures during our first lab meeting, but some of the basics are:

- 1. Whenever ANYONE in lab is working with chemicals, glassware, or equipment of any kind, you are required to wear safety goggles; no other type of eye protection is acceptable. Students who do not comply with this will be sent away from the lab.***
- 2. The first few minutes of the lab meeting will often be dedicated to a discussion of safety considerations. Students who arrive late – even a few minutes – may be sent away from the lab.***
- 3. Students who habitually arrive late to their scheduled lab meeting will have the following points deducted from that week's lab report: 1st offense = -0 points, 2nd offense = -1 point, 3rd offense = -2 points...***
- 4. You do not need to complete the "Advance Study Assignment" in your lab manual before your lab meeting time, however, you will be required to complete this – and have your instructor check your work – before you begin the experiment. I'll explain this in more detail in lab.***
- 5. Laboratory reports are due at the end of the laboratory period specified by the online class schedule or your lab instructor; no late work can be accepted.***
- 6. You are encouraged to use a pencil to write your lab reports.***
- 7. You will most often be encouraged to work in small groups of 2 (or sometimes 3) students (*not 5 or 6 or 12 students*), but each student will turn in their own individual laboratory report.***
- 8. You must pass the laboratory to pass the class overall. Missing 3 or more laboratory meetings will be grounds for failing the class overall unless special arrangements have been made for highly unusual situations. See me immediately if you are going to miss 3 lab meetings.***

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Academic Dishonesty (“Cheating”)

I take cheating very seriously, and I will pursue the strictest penalties for clear-cut cases of cheating. However, I will assume that you are innocent until proven guilty.

1. Cheating will be defined as, but not limited to (1) using any method to copy another’s work on an exam or quiz; (2) directly copying another student’s homework assignment or laboratory report; (3) using any method other than your own honest efforts to complete and earn grades for exams, quizzes, outside-of-class assignments or laboratory reports.
2. The following activities are NOT cheating: (1) collaborating with other students to complete laboratory reports or “homework” assignments; (2) working with other students to study for exams or quizzes.

Disciplinary actions for cheating will be per the “Student Rights and Responsibilities” section of the current LTCC catalog and are outlined below:

OBVIOUS CHEATING:

1. The first incident of obvious cheating will result in recommendation (to the Vice President, Academic Affairs and Student Services) of **disciplinary suspension from the class** for the remainder of the term. The student will be assigned a grade of “F” for that quarter.

BEHAVIOR OR EVIDENCE OF POSSIBLE CHEATING:

1. The first incident that appears to be cheating will result in a written **warning**; a copy of this warning will be sent to the dean.
2. A second suspicious incident will result in recommendation (to the Vice President, Academic Affairs and Student Services) of **disciplinary suspension from the class** for the remainder of the term. The student will be assigned a grade of “F” for that quarter.

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Relatively Frequently Asked Questions (*only* by students at LTCC):

I taught at Butte Community College, CSU Chico, and at the high school level for about 10 years before coming to LTCC in 2005. Here are some questions (and associated answers) that I have only heard from LTCC students:

Q: Can I make-up a lab experiment?

A: No.

Q: Can I make-up a quiz?

A: No.

Q: Can I take a quiz or exam early (or late)?

A: No.

Q: Can I take the final exam at a different time?

A: No.

Q: Is there extra credit available in this class?

A: No.

Q: I'm the hardest working student in the class; don't I deserve an "A"?

A: While your efforts are admirable and will serve you well beyond General Chemistry, no.

Q: Will you show us an example of every possible type of question that could be on an exam?

A: No. (It's impossible.)

Q: Is this going to be a fun class?

A: No. However, mastering chemistry (or any subject, for that matter) is extremely satisfying.

Over the past 12 years or so, I have received the following question from all – not just LTCC – students:

Q: I have or had a family emergency / major car accident / serious illness / extraordinarily important extracurricular event / etc. that is going to impact my academic performance; may I have special arrangements?

A: Of course. Please come see me as soon as possible if you find yourself in any of these situations. (Note that while a vacation or marriage proposal is an important extracurricular event, neither is a serious or compelling reason for special arrangements.)

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Names of Classmates

Monday, Jan. 5:

(front of classroom)

	<i>(You)</i>	

Wednesday, Jan. 7:

(front of classroom)

	<i>(You)</i>	

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Student Information Sheet

"NEW" STUDENTS: Please complete this form and turn it in during the first week of class.

1. Name: _____

2. I prefer to be called: _____

3. Hometown: _____

4. Academic and/or Career Interests: _____

5. Previous Chemistry Courses (*please tell me about your preparation for this class; briefly describe your previous chemistry courses including when, where, what, grades earned, etc.*)

6. Hobbies, Outside Interests: _____

7. Anything else I should know about you? _____

