Chemistry 102 - General Chemistry 2, Section 3
Spring 2013
READ CAREFULLY

Course Prerequisites: Chem 101 grade of C- or better, Chem 101L

It is a violation of the UNC Honor Code to be enrolled in this course without credit for the proper prerequisites.

Course Section, Time and Location: Section 3, TuTh, 11:00 am, Murray Hall G202

Course Instructor: Todd L. Austell, Ph.D.
Office: Kenan Labs C-142 Email: tlaustell2013@unc.edu
Office Hours: TBA; At many help-sessions (TBA…20-30 hrs of them!)

Required Text and Materials
- Chemistry: The Central Science, 12th edition, Brown, Lemay, Bursten, Murphy
- Solutions to Red Exercises (for Chemistry: The Central Science), 12th edition,
  SOLUTIONS MANUAL NOT REQUIRED but strongly recommended.
- Access to WebAssign.net – Instructions given during first class. Wait for and follow sign-up instructions.
- Three-ring Binder and 3-hole Paper Pad: Buy a good binder to hold all your class handouts, notes, and exam.
  (slant-D style binders are recommended)
- COURSE PACK of partial notes. Purchase before first class at UNC Student Book Store.
- A Scientific Calculator: Purchase a good one and LEARN TO USE IT. Don’t buy a calculator you cannot understand how to use. They can get pretty complicated. Your calculator should have as the bare minimum the following functions…. Note: for Chem 102, calculator must be able to do linear regression…. to find best fit line.
  +, -, /, *, x^2, ln, log, exp, e^x, 1/x, and stat. functions (mean, standard dev., y=mx+b for x,y data set, i.e. best fit line)

Class Attendance
Attendance at all lectures is mandatory if you hope to do well in this course. Attendance at as many help-sessions and tutorials as possible is also highly recommended if you have any trouble with the homework problems. Attendance in class may be confirmed at any time as part of grade.

Assigned Seating (rows of honor) - If necessary.
A few front rows of seating may be assigned starting a few weeks into class. We’ll call these “rows of honor” for each class. Seating assignments on these rows will rotate randomly through the class roll to make sure everyone gets a chance to sit down at the front. Seating assignments for “rows of honor” will be posted on the screen 5 minutes before each class begins. Make sure to check it before sitting down when you enter the classroom. Attendance when scheduled in assigned seating will be verified. Absences will result in point deductions from the nearest exam.

Homework (ONLINE)
This semester we’ll be using WebAssign.net for our required assignments. More info will be given in class and online. Homework will be required and does count toward the final grade.

Free Tutoring
Free tutorial (HELP) sessions are available in room C-143 Kenan Labs (General Chemistry Resource Center) from 2-7 pm Monday through Thursday of each week. This resource is set up to help you find answers to your questions. Make sure to take advantage of this free resource. I’ll hold some hours in the center as will the other general chemistry professors (times TBA).

Exams / Quizzes
There will be three midterm exams and a final exam with point distributions as shown on next page. IN-CLASS assignments, ONLINE problems and any quizzes will average together to as a fourth exam (labeled HWIQ on next page).
Course Grade:
Calculated as follows:
\[
\text{Final Ave} = \frac{(\text{Average of Exams 1,2,3 and HWIQ})*3 + (\text{Final Exam})*2}{5}
\]

HWIQ = Sum of WebAssign Homework/InClass/Quiz Ave = (15% of grade).
Each of 3 exams is worth 15% of your grade, and the Final Exam is worth 40%.

### Grading Scale for Final Course Grade

<table>
<thead>
<tr>
<th>Score</th>
<th>Grade</th>
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<tbody>
<tr>
<td>93-100</td>
<td>A</td>
</tr>
<tr>
<td>90-92</td>
<td>A-</td>
</tr>
<tr>
<td>87-89</td>
<td>B+</td>
</tr>
<tr>
<td>83-86</td>
<td>B</td>
</tr>
<tr>
<td>80-82</td>
<td>B-</td>
</tr>
<tr>
<td>74-79</td>
<td>C+</td>
</tr>
<tr>
<td>66-73</td>
<td>C</td>
</tr>
<tr>
<td>60-65</td>
<td>C-</td>
</tr>
<tr>
<td>50-59</td>
<td>D</td>
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<tr>
<td>&lt;50</td>
<td>F</td>
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</tbody>
</table>

When the Final Grade averages are calculated, all fractional points are rounded to the nearest integer grade (from two decimal places). For example: 82.46 rounds to 82, 92.51 rounds to 93.

### Previous Grade Stats (updated through 2011 classes)

A's 12.46%; A-'s 5.97%; B+'s 7.06%; B's 12.91%; B-'s 7.92%;
C+'s 11.38%; C's 19.67%; C-'s 7.09%; D's 7.57%; F's 7.97%.

### Missed Exams/Quizzes, In-Class Assignments, ONLINE Homework

No make up exams will be offered under any circumstances. Missed quizzes and in-class assignments may also NOT be made up. This allows attendance to factor into your class grade. No late ONLINE homework will be accepted for any reason… including computer problems.

**If you miss an exam for any reason (sickness, family emergency, university trip, etc), the exam's percentage of your grade may be shifted to the final if your excuse is approved by an academic dean. (only for one missed exam)**

***If you need to reschedule your FINAL EXAM due to a conflict with several other exams, you must submit a Dean's note of approval BEFORE the last day of class.***

### Tentative Exam Dates

<table>
<thead>
<tr>
<th>Exam I</th>
<th>February 5, 7 or 12</th>
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<tbody>
<tr>
<td>Exam II</td>
<td>March 5 or 7</td>
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<tr>
<td>Note:</td>
<td>If leaving before Mar. 7 for spring break, you <strong>must not take this class section</strong>. No excused absences on this exam (if Mar. 7) for any reason.</td>
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<tr>
<td>Exam III</td>
<td>April 9, 11 or 16</td>
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**FINAL EXAM** Saturday, May 4 at NOON.

### SAKAI Course Site and Email:

Email and SAKAI ([http://sakai.unc.edu/](http://sakai.unc.edu/)) will be used extensively to manage this course. Handouts, useful web links, assignments, grade information will be all available on the SAKAI site. Make sure you check the SAKAI site each morning and evening. All materials on the SAKAI site are testable. Study the resources there carefully.

**Note:** You must have and use a UNC email address for this course.
## Tentative Schedule of Lecture Topics – 2 to 3 lectures per chapter

<table>
<thead>
<tr>
<th>Course Introduction</th>
<th>Chapter 21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuclear Chemistry</td>
<td>Chapter 10</td>
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<tr>
<td>Gases</td>
<td>Chapter 11</td>
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<tr>
<td>Intermolecular Forces: Liquids</td>
<td>Chapter 11</td>
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<tr>
<td>Solids and Modern Materials</td>
<td>Chapter 12</td>
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<td>Properties of Solutions</td>
<td>Chapter 13</td>
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<tr>
<td>Chemical Kinetics</td>
<td>Chapter 14</td>
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<td>Chemical Equilibrium</td>
<td>Chapter 15</td>
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<td>Acid-Base Equilibria</td>
<td>Chapter 16</td>
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<tr>
<td>Additional Aspects of Aqueous Equilibria</td>
<td>Chapter 17</td>
</tr>
<tr>
<td>Chemistry of the Environment (ON YOUR OWN; no in-class lectures)</td>
<td>Chapter 18</td>
</tr>
<tr>
<td>Chemical Thermodynamics</td>
<td>Chapter 19</td>
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<tr>
<td>Electrochemistry</td>
<td>Chapter 20</td>
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**Last Day to Drop Class – Tuesday, March 5**

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**Honor Code Policy:** …as adopted by Dept. of Chemistry on Sept. 9, 1977.

“Since all graded work (including homework to be collected, quizzes, papers, mid-term examinations, final examinations, research proposals, laboratory results and reports, etc.) may be used in the determination of academic progress, no collaboration of any kind is permitted unless the instructor explicitly indicates that some specific degree of collaboration is allowed. This statement is not intended to discourange students from studying together or working together on assignments which are not to be collected.”

**Note:** I encourage you to work together in exam preparation, but you must do WebAssign problems individually. It’s the only way to effectively learn the material.

**Other Honor Code Reminders**
- It is a UNC Honor Code violation to receive aid on a take-home assignment from any source other than those defined as useable on the assignment.
- It is a UNC Honor Code violation to receive any assistance or to work with any other person on an ONLINE HOMEWORK assignment.
- It is a UNC Honor Code violation to observe anyone else violating the above policy.
- It is a UNC Honor Code violation to report the infraction to the instructor.
- It is a UNC Honor Code violation to write on any graded exam prior to submitting it for a REGRADE request.
- It will be deemed a UNC Honor Code violation if anyone passes any notes from the class to any online resource, commercial or otherwise without Todd’s permission.
- It is a UNC Honor Code violation to use a programmed calculator in an in-class exam.

**Specific Class Guidelines**
- Cell phone use and texting is not permitted in class. If your cell phone rings during the class period, you must notify me (Todd) at the end of the lecture. The penalty is a ONE POINT deduction from your nearest exam score. It’s an **honor code violation** not to notify me if your cell phone rings… or not to tell me if a neighbor’s rings and they do not admit it.
- Electronic devices (ipods, phones, etc) must be turned off unless used on lectern for recording.
- Headphones are not permitted in class unless approved for hearing amplification purposes.
- Please keep laptop computers and phones off and in your bags during lecture.
- Please do not read newspapers during lecture.
- Please throw all snack wrappers and drink bottles/cans in the proper receptacles… not on floor.
- You may not sit on the floor in the back of the class. Can’t find a seat? Sit on the stairs.
Keys to Making a Good Grade

1) Make sure to prepare for and come to class. Read ahead of time and look over notes outline.
2) Do all the ONLINE HOMEWORK and as many assigned problems as possible ahead of time.
3) Ask questions as soon as you have them. Don't delay.
4) Keep up. If you wait to the last minute to study for one of our exams, more than likely you will fail it. You must develop mature study habits. See me. I can help.
5) Don't think this class is a "weed out" class. It is not. For the most part, what you'll be learning is the same material taught in most high school programs that have two years of chemistry.

The Importance of Math Skills (Algebra)
My experience with general chemistry instruction has proven to me that the number one issue that tends to lower a student’s grades in the class is a weakness or lack of math skills. This applies to all students…including those who have placed out of or into calculus. It’s imperative that all students review their algebra skills (not calculus) prior to the beginning of this course. Important topics that you must remember include but are not limited to the following: solving word problems, using log and exponent rules, solving equations of one variable, solving quadratic equations, performing simple math WITHOUT at calculator.

THINK YOU MAY BE WEAK IN MATH?..FIND A BOOK AND REVIEW PRIOR TO CLASS.

Words of Encouragement
I love UNC and I love teaching this course. I’m going to give you my all as an instructor, and I expect the same from you as a student. If you follow all my guidelines and are disciplined in how you approach this course material, you can do well. I want to make this class the most positive experience possible for you, but I also want you to have a great UNC experience. Feel free to use me as an advisor and resource not just for this course but for your whole UNC experience.

Todd

A few more words so you know a little bit more about your instructor:

Todd L. Austell, Ph.D. (Please call me Todd) Born sometime in the 1960’s in Shelby, NC.
Married to Jenna (on May 5, 2012) who was ironically born in Austell, Ga. She is a physical therapist.
B.S. Chemistry (B.S. Biology), UNC 1987.
First majored in Math and Pre-med. before changing to the above.
Lived in Granville and then R.A’ed in Ehringhaus as an undergrad.
DOE Fellowship in Nuclear Chemistry, San Jose (SJSU), California, Summer 1986.
Reentered UNC Graduate School in 1988.
Dissertation Title: Electrospray and Microelectrospray Ionization: Applications with Mass Spectrometry.
Visiting Chemistry Prof. at UNC Fall 1995 - Summer 1997.
General College advisor at UNC Summer 1995 - Summer 1997.
Previous Teaching Experience: Chem. 101,102,241,261,101L,102L, 441L, 481L.
Assistant Professor at United States Air Force Academy in Colorado Springs, Colorado from July 1997 - June 1998.
Current Positions: Research Assistant Professor in UNC Chemistry Dept. since July 1, 1998.
Director of General Chemistry Laboratory (Chem. 101L/102L) program July 1, 1998 thru 2008
Director of the Chemistry Tutorial Program since August of 1999. Located in Kenan Labs C143.
General College advisor for science majors, for the Johnston Scholars Program, and for the Covenant Scholars program.
Departmental advisor for Chemistry majors.
Personal Ongoing Readings/Research:
-Scientific correlations and support of the Bible.
-Origins research.
-Human sexuality.
Random Stuff: Volunteer Campus Tour Guide at UNC from 1990-2001. Still occasionally give tours and help out at U’grad. Admissions. I worked extensively with Student Ticket distribution for football and b-ball on campus for 6 years while in graduate school. I can help you understand the distribution process if you’re confused. I go to many UNC sports events.
Hobbies: Racquetball, Disc Golf, Ultimate Frisbee, Four-wheeling, Gardening, Camping, Hiking and Rock Climbing, Exploring the West, Basketball, Physical Fitness…and a true-blue Carolina fan of all sports.
Interests: Time with family, music (listening to), gardening, electronics, computers, Bible study, and science in general.
Other important information: A Christian since 1976 and attendee of the Chapel Hill Bible Church.
Faculty sponsor/advisor for the UNC Fellowship of Christian Athletes.
Faculty advisor UNC Student/Faculty Christian Fellowship.