

## Chemistry 155 Honors General Chemistry Winter 2017

**Lecture:** MWF 2:30-3:20 in BAG 261  
**Section AA:** Quiz Section Th 11:30-12:20 SIG 134  
Laboratory T 11:30-2:30 BAG 293  
**Section AB:** Quiz Section Th 2:30-3:20 MOR 116  
Laboratory T 2:30-5:20 BAG 293  
**Section AC:** Quiz Section Th 1:30-2:20 SAV 138  
Laboratory T 5:30-8:20 BAG 293

**Note: Section information above is provisional--UW Times takes precedence unless otherwise announced!**

<b>Instructor:</b>	Professor David Ginger, Office Bagley Hall 202A/B dginger[at]uw <i>Address ALL subject related questions to the discussion forum below so your peers may contribute to, and benefit from, the discussion!</i> (put CHEM155 in the subject of any email directed to me)
<b>Office Hours:</b>	Prof.: David Ginger Fri. 3:30-4:20 (Bag 202) <i>or by appointment</i> TA's: Soumya Samai & Lucas Flagg, Chemistry Study Center (Bagley 3 <sup>rd</sup> floor) Hours Mon: TBA Note: <i>for support you have non-lecture contact hours available every day but Weds, and electronic discussion board access 24/7</i>
<b>Text:</b>	D. W. Oxtoby <i>et al.</i> Principles of Modern Chemistry (7 <sup>th</sup> Ed)
<b>TAs:</b>	<i>Address ALL subject related questions to the discussion forum</i>
<b>Discussion Forum:</b>	<a href="https://catalyst.uw.edu/gopost/board/dginger/43609/">https://catalyst.uw.edu/gopost/board/dginger/43609/</a> (monitored daily)
<b>Course Website:</b>	<a href="http://faculty.washington.edu/dginger/CHEM155_W2017/index.html">http://faculty.washington.edu/dginger/CHEM155_W2017/index.html</a>
<b>Canvas Site (Panopto Links only)</b>	<a href="https://canvas.uw.edu/courses/1097762">https://canvas.uw.edu/courses/1097762</a>

**Prerequisites:** Chem 145 with a minimum grade of 2.0 or permission of the instructor. Students are responsible for the material from Chem 145, and for basic Excel spreadsheet competency.

**Note Taking:** Take written notes using a spiral bound notebook, not in your textbook, and not on loose paper. Links and tips about good note taking are available on the discussion board. *Conventional laptops are not permitted in class. Tablets/touchscreen devices may only be used for note taking using a stylus input and with WiFi/cellular data disabled.*

**Honors Expectations:** Honors classes require **far** more time and effort than their "regular" counterparts. You should enroll in an honors course because you are excited by chemistry, because you want to be challenged, and because you want to work harder and cover more material in more depth than in the regular sections.

**Midterm Exams:** There will be two midterm exams given during either lab periods (TBA). Please follow the course announcements closely both in class and online. Past students have commented that the midterms in 155 tend to be considerably more challenging than those in 145. You are encouraged to prepare in depth accordingly, but don't panic the class grade is curved!

**Final Exam:** according to time/location indicated in UW Time schedule.

**Homework:** Problem sets should be downloaded from the course website above. Unless otherwise indicated, they will be due at the START of class on Monday. NO late papers (not even 30 seconds because the bus was late) will be accepted *except* in the event of serious medical emergency or event of similar gravity. The final homework grade will be computed after dropping the lowest *two* homework scores (including in-lecture quizzes). Use your "free drops" as you see fit (save them for an illness, off week, or late bus).

**Laboratory:** The lab manuals will be available for download online each week. There are five experiments: buffers, solubility product, electrochemistry, kinetics, and quantum/spectroscopy. Each of the experiments requires a lab report and Excel-based data analysis. The lab reports are due at the *beginning your next lab session* or as indicated on the syllabus (except for the last one which is due at your last discussion session). Only ONE absence or missed lab report of any kind is permitted. **Except in extraordinary circumstances, two absences OR incompletes/zeros on two or more lab reports will result in an automatic failure (0.0/4.0) for the course.**

**Office Hours:** I try to schedule office hours, appointments, and review sessions, so that I can focus exclusively your questions. If you can't make regular office hours, I'm happy to *schedule* additional appointments -- please post a request on the discussion board so we can schedule at a time that others can also join (only if you have a private matter should you schedule an appointment by email!). However, my calendar can fill up a week *or more* in advance during a busy quarter so try plan ahead. *If you stop by my office without an appointment please don't be offended if I am unable to accommodate your question—it simply means I'm often working on a deadline for another duty.*

**Plagiarism and Cheating:** You are encouraged to work together on the homework assignments and sometimes you may be asked to share laboratory data. HOWEVER you must come to your own conclusions and write up your assignments independently. Anything you turn in must be your own words (unless attributed, with a full citation and quotation) and with your own calculations. Please feel free to verbally discuss your results with your classmates and TAs, but do not directly share text or analysis (*e.g.*, graphs, excel files) beyond raw data. Sharing text, graphics, or complete solutions, is plagiarism, whether or not occasional words have been changed. Plagiarism cases will result in an X final grade and cases will be referred to the UW academic misconduct committee. Use of "old" lab reports, and use of previous copies of previous homework answer keys is cheating and will result in a zero and referral to appropriate academic authorities. Bringing materials other than the allowed handwritten notes to an exam, or receiving or providing assistance during an exam will result in the same penalty.

**Disabled Students:** If you would like to request academic accommodations due to a disability, please contact Disabled Student Services, <http://depts.washington.edu/uwdrs/> , 543-8924 (V/TDD). If you have authorization from Disabled Student Services indicating you have a disability that requires academic accommodations, it is your responsibility to request accommodation with a minimum of 2 weeks before the relevant examination.

**Questions, comments, suggestions, etc.:** *Please* raise any issues that come up -- the more communication the better -- with the Professor or the TAs, in person (at office hours, in, before, or after class), via email, or via a note in his/her mailbox. Notes can be signed or anonymous. The course isn't perfect, but I try new things (and try to improve old things) every year. My one request is that you not use the course discussion board for complaints, comments or suggestions about the course content—I find this distracts from its purpose as a learning tool.

#### **Cell Phones, Computers, and Personal Electronics**

Personal electronics including computers, tablets, laptops, cell phones, iPods, MP3 players, and WiFi enabled devices are not to be used during lecture or exam periods without the permission of the instructor. Laptop and tablet style devices on mute are permitted *during the lab section only and for the purpose of research only*. If your phone rings during class, lab, or especially exam period you may be asked to leave until the next week. *Any use of an electronic device during an exam period without prior written authorization (other than a standard graphing calculator without wireless communication capability) will result in a grade of zero.*

#### **Preparing for Class:**

Class sessions will be more useful if you 1) read the text prior to lecture and 2) attempt the homework throughout the week (even if we haven't fully covered that topic yet).

#### **GRADING**

There will be two exams plus a final exam. Grading will be based on the total number of points obtained on the exams and the homework. Unannounced 'pop quizzes' may be given during lecture and will each count as one homework grade. The lowest two homework/quiz scores will be dropped before computing the average. Note: On exams, quizzes and homework, no partial credit will be awarded for "really wrong" answers unless the error is recognized and noted. (In other words, you MUST think about if your answers make sense rather than just using formulas!).

Homework/ Lecture Quizzes	100 Points
Quiz Section Quizzes	40 Points
Midterm I	150
Midterm II	150
Final	300
Lab reports	150
<b>Total</b>	<b>890 points</b>

**Extra Credit—Bonus points up to 10% of the total hw score will be added to the final homework score for correct, thoughtful replies to other students questions on the discussion board and for finding a major error in a problem answer or derivation (not just 3.14159 instead of 3.14 for pi, or a dropped – sign on one side of an equation). The awarding of any and all extra credit will rest with the non-negotiable judgement of the professor and TA/grader.**

### **Homework format and grading**

For each assignment, please show your work, turn in your questions *in order*, and either highlight or put a box around the question number and final answer(s). You may not receive full credit if the TA has difficulty finding your answers (remember, he or she may have 72 papers to grade). Homework is graded to encourage you to do it, but not to check if every answer is correct, which is your responsibility. See the rubric below. Remember partial credit will not be awarded if you should have been able to notice that your answer was “way off.”

Homework Grading Rubric: 10 points total

5 points - *Do you appear to have done the homework in a thoughtful manner? (Copying an answer out of an answer key is plagiarism and is not counted as “a thoughtful manner.”)*

4 points - *One or two randomly chosen homework problem(s) will be graded for content.*

1 point - Neatness. *Are the questions all in order? Are the answers and the question numbers boxed or highlighted? Is your TA happy having to grade your paper?*

**Lab report format and grading** for each report will be discussed in lab or discussion section. The text portions of the lab reports should be typed. They will be graded on clarity as well as content, because presenting results clearly and accurately is a critical skill for in any career (scientific, medical, or otherwise). Clarity includes the quality of the graphs, properly labeled graph axes, the quality of the written English language, and legibility of handwriting (if any). No points will be awarded for professional plastic report binders however.

### **Chem 155 Winter 2017 Tentative Schedule:**

#### **Week of Jan 2:**

M: No Class – New Year’s day observed

T: (*no lab week 1*) *Official first day of class*

W: Ch 15: Acids/Bases/Equilibria

Th: Discussion sections

F: Ch 15.

#### **Week of Jan 9:**

M: Ch 15.

T: Lab #1: *Buffer Lab*

W: Ch 15.

Th: Discussion sections

F: Ch 16: Solubility and Precipitation -- *No office hours on 1/13*

#### **Week of Jan 16:**

(M: no class Mon Jan 16– MLK Holiday)

T: Lab #2: *Temperature Dependence of Solubility*

*\*Lab report #1 due in lab\**

W: Ch 16.

Th: Discussion sections

F: Ch 17: Electrochemistry

#### **Week of Jan 23:**

M: Ch 17.

T: Lab #3: Electrochemistry

*\*Lab report #2 due in lab\**

W: Ch 17

Th: Discussion section

F: Ch 17

#### **Week of Jan 30:**

M: Ch 18: Chemical Kinetics

T: **Midterm Exam I** (in lab period)

W: Ch 18:

Th: Discussion section

F: Ch 18

#### **Week of Feb 6:**

M: Ch 18.

T: Lab #4: *Kinetics Lab (report #3 due)*

W: Ch 19 Nuclear Chemistry

Th: Discussion Section

F: Ch 19:

#### **Week of Feb 13:**

M: Ch 4 Intro to Quantum Mechanics

T: No lab

W: *Ch 4 Introduction to Quantum Mechanics*

Th: **Discussion Sections**

**\*Lab #4 due in Quiz section\***

F: Ch 4: Intro to QM *Office hours 1:30-2:30 on 2/17*

#### **Week of Feb 20:**

M: No Class President’s Day

T: **Midterm Exam II** (in lab period)

W: Ch. 5 Quantum & Atomic Structure

Th: Discussion Sections

F: Ch 5 Quantum & Atomic Structure

#### **Week of Feb 27:**

M: Ch 6 Quantum & Molecular Structure.

T: Lab #5: *Emission Lab*

W: Ch 6: QM and Molecular Structure

Th: Discussion Section

F: Ch 6 QM and Molecular Structure

#### **Week of March 6:**

M: Ch 6. QM and Molecular Structure

T: --- no lab ---

W: *Ch 20: Molecular Spectroscopy and Photochemistry*

Th: Discussion Sections

*Lab report #5 due in quiz section*

F: Ch 20 Molecular Spectroscopy and Photochemistry

*Extra Credit Seminar Reports Due in Class*

*Homework #10 is not to be turned in*

#### **Final Exam:**

*Tuesday March 14, 2017, 230-420 pm, BAG 261*

*UW time schedule takes precedence*

**Reading notes: We will cover Oxtoby Chapters 15-19, Chapters 4-6, Chapter 20 in that order.**