

# *Chemistry 142      Dr. Parker      Fall 2016*

*If I have seen farther, it is by  
standing on the shoulders of giants.*

— Sir Isaac Newton

**1. Oxford College and Liberal Arts.** A liberal arts education is generally considered one which is aimed at imparting knowledge and developing intellectual capacities. Oxford College is dedicated to a liberal arts education, and science, including chemistry, is an integral part of the liberal arts.

**2. Learning Goals.** You should demonstrate you can:

- Utilize critical thought and reasoning to understand chemical behavior at the microscopic and macroscopic levels.
- Develop solutions to problems which you have not encountered before.

**3. Content goals.** You will be expected to master these areas of chemistry:

- Coordination compounds and crystal field theory
- Intermolecular forces
- Phase diagrams
- Concentration units
- Factors affecting solubility
- Colligative properties
- Kinetics, including rates of reaction and reaction mechanisms
- Equilibrium, including LeChatlier's Principle
- Acids, bases, buffers
- pH and titrations
- Solubility equilibrium
- Entropy and free energy
- Electrochemistry, including electrochemical cells and electrolysis
- Nuclear chemistry

**4. Materials.** You will need for class:

- Textbook: "Chemistry" 12<sup>th</sup> ed., by Chang. Optional: study guide, solutions manual.
- Scientific calculator. Calculators which can download and/or store information, which can automatically solve equations or perform conversions, or which can be programmed, are not allowed on exams.

You will need for lab:

- Laboratory manual, sold by the Chemistry Department.
- Carbon-copy lab notebook.
- Safety glasses (can be purchased from the Chemistry Department or elsewhere).

You must have all three materials for lab before your first lab meeting.

**5. Proper Behavior in Class.** Class is a learning environment; expected behavior includes:

- Coming to class on time and being attentive in class.
- Not going in and out of class (unless you're sick) – please get a drink or use the restroom before or after class.
- Not eating or drinking in class. Water bottles are acceptable.
- Not working on material for another class.
- Not bringing a cell phone to class. Should you bring one and it goes off, or should you use it in any way, you will leave the class and be counted absent. If this happens a second time, you may not return to class.
- Not bringing a laptop computer to class unless you need a computer to assist you in class and you have made arrangements with me.
- Bringing your textbook and all handouts to each class.

Not respecting the learning environment in class can affect your grade and future recommendations.

**6. Attendance.**

- Students are expected to attend all class meetings. However emergencies can arise which may result in absence from class. It would be a good idea to notify me if an absence is due to illness or other emergency. You are responsible for all material covered if absent.
- You are allowed 3 absences in class. If you exceed the 3 absence limit for any reason, by any combination of absences or tardies, you will:
  - (a) Lose 1 points for the next absence (number 4);
  - (b) Lose 2 points for the next absence (number 5);
  - (b) Lose 3 points for each additional absence (numbers 6 and up).

These points will be deducted from the final average. Note that there are no “excused” absences.

- Besides missing class, these also count as an absence:
  1. Being late to class TWICE. (This means coming in after I’ve finished checking the class roster.) If you come in late, it is your responsibility to see me immediately after class to ensure that you are marked as being tardy and not absent. No adjustments will be made at a later time.
  2. Coming to class more than 15 minutes late.
  3. Leaving class early.
  4. Going in and out of class.
  5. Being inattentive in class or working on other assignments in class.

**7. Canvas.** You are expected to read our class’s Canvas site regularly.

**8. Problems.** At the end of each chapter, there are problems which you should work to help you in understanding the material. These problems are for your benefit only; they will not be taken up or graded. Since general chemistry is a problem-oriented course, and the tests will consist mainly of problems, it is essential that you become proficient in working problems such as those found at the end of the chapters. You should work problems as you encounter the material. You should also attempt each problem before seeking help from the book, your notes, or the answer. It is not sufficient to be able to follow how a problem is worked; on a test, you will have to work a problem all the way through, and the only way you will be able to do this is if you have worked numerous practice problems. See the “Survivor’s Guide” for more information.

**9. Tests.** There will be 4 exams. These will be given in class. Each exam will last 65 minutes. Make sure your calculator is one which is allowed, that it is working, and that you know how to use it. Calculators will not be loaned or shared. You must take the exam during your regular class time. If you come in late, you will not be given extra time to finish the exam. The honor code applies to all exams (see the Honor Code Pledge handout).

- Each exam will also include an out-of-class essay which must be:
  - word-processed
  - double-spaced
  - in 12-point type
  - in black ink
  - printed – electronic submission is not acceptable
  - one side of the paper.
  - stapled if more than one page.

Essays that do not follow the above standards will not be accepted. The topic will be posted 4-7 days in advance on the class Canvas site. The essay must be turned in when

you come to take the exam. Part of your grade on the essay will be based on your writing – grammar, spelling, and punctuation. You should run a spell checker and proof-read. Your essay should consist of your own words – do not quote or paraphrase the textbook or any other source.

You may use only the textbook and your notes. You may not use any information from the Internet, including paraphrasing or direct quotes. You may not give or receive assistance from anyone regarding the content of the essay. You may have someone not in my classes proof-read your essay for its writing and you may consult a writing tutor.

- Oxford College has adopted as part of its Mission Statement that its curriculum is designed to teach students to "embrace responsible citizenship." In addition, as part of its Purpose Statement, the College lists "to augment the student's ... intellectual awareness of the world". To encourage you to become aware of the world around you, most exams will have a bonus question or two on "current events."
- Make-up exams are not given, regardless of the reason an exam was missed. If you miss an exam and present me with an acceptable excuse, the grade on the final exam will count in place of the missed exam grade. You must notify me by the day and starting time of the exam that you will not be present and you must give me the reason for the absence. If the excuse is not considered acceptable, the exam grade will be a zero. In general, illness or an emergency situation are the only acceptable excuses for missing an exam. If you are going to miss an exam for a religious holiday or for a school-related activity, you must make arrangements to take the exam early. Missing an exam also counts as an absence in the course. The grade on the final exam can only replace one missed exam; additional missed exams will receive a grade of zero.

**10. Honor Code.** It is assumed that all Oxford College students will adhere to the highest standards of academic honesty and will uphold the Honor Code.

On exams, you may not use any material not distributed with the exam itself except for a calculator and pencils/pens (and the calculator must be an allowed one). Any other material you bring into the room must be left at the front of the room, including a cell phone or other electronic device. Having a cell phone on you or at your desk during an exam is an Honor Code violation. During an examination, you may not give or receive assistance. On out-of-class essays, the work is to be your work alone – you may not give or receive any assistance, and you may use only authorized materials. Since absences and tardies can affect your grade, giving false information regarding absences or tardies is a violation of the Honor Code. See the Honor Code Pledge handout for more information.

**11. Laboratory.** At your first lab meeting, the lab procedures will be explained to you. The lecture and laboratory are designed to coordinate so that material will be covered in class before the experiment that involves that material. Note under Grading below, how your lab average affects your course grade.

## 12. Schedule.

Chapter 23, sections 3,4,5,7  
Chapter 11, sections 1-3, 8.9,4,6,7  
Chapter 12  
Chapter 13  
Chapter 14

Chapter 15  
Chapter 16, sections 1-6,8,9  
Chapter 17, sections 1-6  
Chapter 18  
Chapter 19

## 13. Exam Schedule.

Exam	Material Covered	Projected Date
I	Ch. 23.3 – Ch. 12	Friday, Sept. 16
II	Ch. 13 – Ch. 14	Wednesday, Oct. 5
III	Ch. 15 – Ch. 16	Friday, Nov. 4
IV	Ch. 17 – Ch. 19	Friday, Dec. 2

Exams may be moved forwards or backwards as necessary; this will be announced in class and on the class Canvas site.

**14. Final Exam.** There will be a final exam, covering the semester's material. This will be given during the regularly scheduled final exam period. Final exams are not returned.

**15. Review sessions.** A review session will be held before each exam, usually the day before the exam. The review normally does not take up the entire class period.

**16. Office Hours.** My office is Oxford Science Building ZrO. The best times to find me are Tuesday and Thursday afternoons, but I am usually in my office and available from 9-5 every day, except around lunch time (11:30-1:00) and during my other classes and labs.

**17. Grading.** The final will count as two exam grades, giving a total of 6 (4 exams + final counting twice). The lowest of these 6 grades will be dropped. This average will constitute the lecture portion of your course grade.

NOTE: If you are found guilty of an Honor Code violation by the Honor Council, the usual penalty is an F in the course. If you are assigned an F on the exam instead, that grade will be a zero and no exam grade will be dropped – the zero and all the other exam grades will be averaged for your lecture grade.

Your course grade will be computed by taking 80% of your lecture grade and 20% of your lab grade. Any attendance penalty will then be subtracted.

**18. Grading scale.** Grades are normally assigned as follows:

93.0 and up	A	77.0 – 79.9	C+
90.0 – 92.9	A-	73.0 – 76.9	C
87.0 – 89.9	B+	70.0 – 72.9	C-
83.0 – 86.9	B	67.0 – 69.9	D+
80.0 – 82.9	B-	63.0 – 66.9	D
		62.9 and below	F

Your exam average AND your lab average must both be passing (63.0 or higher) or you will receive a grade of F in the course regardless of your final numerical average.

Grades are assigned based on your performance in the course (exams, lab, attendance) and are not open for discussion after being assigned.

Grades are not automatically rounded. If you are near a border of 2 grades, consideration is given to such items as attendance, improvement over the semester, and class participation.

**19. Special note.** Most students who did not make at least a C in Chemistry 141 have a difficult time in Chemistry 142 and quite often make a D or F. Those students are strongly encouraged to sit in on Chemistry 141 for review or retake the class before taking Chemistry 142.