Chemistry 1142 Syllabus
General Chemistry 2
Spring 2023

Instructor: Dr. Andrew Napper

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Office hours: T 9:00 – 9:30 A.M. W 3:00 – 5:00 P.M.
R 3:30 – 5:00 P.M.

Lecture: TR 9:30 – 10:50 A.M. (MAS 020)

Quiz: A 10-minute quiz will be given at the start of Tuesday's lecture. It will cover material from the previous week's lectures.

Lab: T 11:00 – 1:50 P.M. (Massie 339) **Section 01**
R 11:00 – 1:50 P.M. (Massie 339) **Section 02**

Attendance policy: Attendance at laboratories is required. Two or more unexcused lab absences will result in a grade of F for CHEM1142. If you are more than 15 minutes late to lab, this will count as an absence.

Excused absence policy: In case of illness, accident, family emergency, or university-sponsored activity, you may be excused from labs, quizzes, and/or homework. In case of a missed exam, a make-up exam will be provided.

For university-sponsored activities, an official excused absence slip must be obtained. This must be obtained in advance of the activity and given to the instructor one-week before your absence.

For other absences, suitable documentation (such as a doctor's note, police accident report, etc.) must be provided within one-week of the excused absence. For absences longer than one week, an academic dean or the dean of students may issue you an excused absence which you can present to your instructor.

Unexcused absences will result in a grade of zero for the assignment.

Required materials: *Chemistry*, 14/e (ebook, accessible via BlackBoard)
—Chang and Overby
Note: you can also purchase a loose-leaf copy of the book for around $30 from the bookstore: ISBN: 9781266334474
Aleks360 (online homework)
—Bundled with the textbook or a separate access card
Chemistry 1142 Lab Manual, Spring 2023
—Andy Napper
A *non-programmable* scientific calculator (TI-30XIIS)
Safety goggles or visorgogs (ANSI Z-87 approved)

Grading:

3 exams	45% (Massie 020)
Weekly quizzes	10% (Massie 020)
Final exam (Comprehensive)	15% (Massie 020)
Online homework	10% (Cyberspace)
Laboratory	20% (Massie 339)

Final exam: Thu, April 27 @ 8 AM in Massie 020

Final exam information: The final exam is an American Chemical Society standardized final. It is fully comprehensive, covering material from CHEM 1141 and 1142.

Grading scale:

%	Grade	%	Grade	%	Grade
>93	A	77–80	C+	60–63	D–
90–93	A–	73–77	C	<60	F
87–90	B+	70–73	C–		
83–87	B	67–70	D+		
80–83	B–	63–67	D		

Blackboard course-site: Notes, handouts, and other useful pieces of information will be available at the following URLs:
http://blackboard.shawnee.edu
http://chem1142.ssuchemistry.com

Online homework: You should log on to Aleks as possible! Online homework will be assigned on a weekly basis. The homework set may consist of tutorials, homework problems, and review problems. **Each homework set will be made available on Friday by 5 P.M. and will be due the following Tuesday by 9 A.M.**

- You will be able to access online assignments on Blackboard. They are in the "eBook + Homework" tab on the left side of the screen.
- The inclusive-access course-fee provides you with access to the textbook and an account with Aleks360 at a significant cost savings.

Cell-phone policy: Cell phones (and other similar electronic devices, such as laptop computers, netbooks, Chromebooks, iPads, Surfaces, smart watches, etc.) are not permitted to be used during exams and laboratory exercises.

General education program: Chemistry 1142 counts towards the Natural Science component of the General Education Program (GEP) and addresses *Scientific Reasoning*.

Study requirements: To be successful in General Chemistry, you will need to study *at least* two hours outside of the classroom, for every hour spent in *lecture*.

Lecture material: We will be covering the following chapters in your textbook:

Chapter 11	Intermolecular Forces and Liquids and Solids
Chapter 12	Physical Properties of Solutions
Chapter 13	Chemical Kinetics
	Exam 1
Chapter 14	Chemical Equilibrium
Chapter 15	Acids and Bases

Chapter 16	Acid-Base Equilibrium and Solubility Equilibria
	Exam 2
Chapter 17	Entropy, Gibbs Energy, and Equilibrium
Chapter 18	Electrochemistry
Chapter 19	Nuclear Chemistry
	Exam 3

Homework problems: Problem solving is an *essential* part of your study of chemistry. As you study, you should be working problems from your textbook on each topic. In addition, it is strongly recommended that you work all of the problems from the Self-Assessment Quizzes at the end of each chapter.

University ADA statement: Any student who believes s/he may need an academic accommodation based on the impact of a documented disability should first contact a Coordinator in the Office of Accessibility Services, Hatcher Hall, 740-351-3608 ext. 3163 or e-mail SSUAccessibility@shawnee.edu to schedule a meeting to identify potential reasonable academic accommodation(s).

Students are strongly encouraged to initiate the academic accommodation process in the early part of the semester or as soon as the need is recognized. After meeting with the coordinator, students are encouraged to meet with their instructors during the instructor's office hours to discuss their specific needs related to their disability. The academic accommodation letter will be sent to the instructor and student via secure email prior to the semester start date.

Any questions regarding the academic accommodations on the letter should be addressed to the Coordinator of Accessibility Services. If a student does not make a timely request for academic accommodations and/or fails to meet with the Coordinator of Accessibility Services, a reasonable academic accommodation might not be able to be provided.

Grading errors: If you notice a grade error on BlackBoard for quizzes, exams, etc.—you need to bring it to the instructor's attention in writing within one week of the due date (for an online assignment) or one week from the assignment being handed back (lab/exam assignments).

Order of labs:

Week Beginning	Tuesday	Thursday
January 9th	*No lab*	
January 16th	1	1
January 23rd	2	2
January 30th	3	3
February 6th	4	4
February 13th	5	5
February 20th	6	6
February 27th	*Spring Break (No Lab)*	
March 6th	7	7
March 13th	8	8
March 20th	9	9
March 27th	10	10
April 3rd	11	11
April 10th	12	12
April 17th	13 & 14	13 & 14

Laboratories:

1. Check-in and safety
2. Intermolecular forces
3. Nine-bottles—An adventure in chemical identification
4. Colligative properties: freezing point depression
5. Kinetics dry-lab
6. Determining a rate law using spectrophotometry
7 Spectrophotometric determination of aspirin content in commercial tablets
8. Determining an equilibrium constant using spectrophotometry
9. pH of acid solutions and salt solutions
10. pHun with buffers!
11. Determining K_{sp} for lead(II) iodide
12. Thermodynamics of KNO_3 dissolving in water
13. Electrochemical cells
14. Check-out

Laboratory information: Safety goggles or visorgogs are required to be worn for all laboratories. They must meet ANSI Z87 requirements (normally this information is permanently stamped on the goggles). Laboratory coats are recommended, but not required. Full length pants or full-length skirts are required to be worn in lab. Shoes that cover all parts of your feet are also required. If you are improperly dressed for lab, you will be asked to leave and awarded a zero for the lab assignment.

Lab reports must be turned in *at the end* of each week's lab. Late lab reports will not be accepted. Turned in lab reports must have your full name clearly written on the front page to receive a grade.

Who should take this course? The typical audience for this course is: science, engineering, pre-pharmacy, pre-medicine, and science education majors. You may also be taking this course if you are interested in chemistry (yay!), are seeking to satisfy the natural sciences general education category, or curious about how things work.

Is chemistry hard? Yes. But not impossible. Consider setting aside several hours a week to practice end-of-chapter homework problems, forming a study group, re-reading your MasteringChemistry assignments, reading the textbook, and quizzing yourself. Reviewing old material every few weeks has been shown to dramatically improve retention of material in college!

What should I do if I need help?

If you need help—don't wait too long before you seek it out! The following is a partial list of options that are available to you:

- Student success center (SSC) tutoring. Stop by the SSC and sign up for a *free* tutor!
- Browse my course website for chapter objectives, old exams, lec. notes, quizzes, etc.
- YouTube. Amazing selection of videos on any topic you can think about. The *Khan Academy* videos are an excellent place to start.
- Office hours. I hold four office hours a week over three days. Stop by if you have any questions about the course!

How to study for this class

Buy a composition notebook to work problems in.

☐ *Skim* through the textbook section before you come to each class

☐ After each class, but before the next class, go through the Example problems in the chapter. Do the "Practice Exercise" problems after each example. You can click the "Answer" button in the eBook to reveal the solutions.

☐ In a separate notebook, answer the problems at the end of each chapter that go over the relevant sections. You can click the "Answer" button in the eBook to reveal the solutions

Before the exams:

☐ One week before each exam, thoroughly read your notes, being sure to work out any problems yourself that we went over. Try covering up my worked answers with a blank piece of paper and then working them yourself.

☐ Re-work the end-of-chapter and in-chapter problems

☐ Print off a practice exam and take it in a timed fashion. Print off the answers and then grade yourself.

Hint: 90 % of your studying in general chemistry should consist of working problems!

End-of-chapter problems

It is strongly suggested that you work the following problems which will serve as a guide for material for exams. The answers are available to you in the eBook for the **even**-numbered questions.

Chapter 11	4, 12, 16, 52, 64, 76, 82, 92, 104, 114, 138, 150
Chapter 12	4, 10, 14, 16, 22, 28, 34, 38, 42, 58, 60, 72, 78, 90, 106
Chapter 13	6, 14, 16, 24, 28, 32, 38, 40, 46, 49, 56, 60, 70, 74, 78, 82, 88, 100
Chapter 14	2, 8, 10, 16, 20, 26, 32, 40, 44, 54, 58, 64, 72
Chapter 15	4, 6, 14, 18, 26, 36, 42, 44, 50, 56, 64, 76, 80, 94, 102
Chapter 16	4, 6, 10, 20, 26, 30, 36, 50, 54, 66, 72, 76
Chapter 17	2, 4, 10, 14, 18, 24, 26, 36, 44, 52, 74
Chapter 18	2, 4, 6, 16, 20, 26, 30, 36, 48, 56
Chapter 19	6, 10, 20, 26, 34, 38

Disclaimer: All dates and policies are subject to change as announced in class.