

Chemistry 1142 Syllabus

General Chemistry 2

Spring 2025

Instructor: Dr. Andrew Napper

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Office hours: W 10:00 – noon | R 3:30 – 4:30 P.M. | F 11:00 – noon

Lecture: TR 9:30 – 10:50 A.M. (MAS 206)

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, you must email me **at least one-week before your absence** and let me know what quizzes/labs/exams you will be missing. Failure to do so may result in a grade of zero for any missed assignment.

If you feel ill on the day of an exam or an in-class activity please report your illness to me immediately. Failure to do so within 24 hours will result in a grade of zero. If you test positive for COVID-19 or are placed in quarantine, you are responsible for notifying me of the dates you will be absent and making up any missed coursework

For other absences, suitable documentation (such as a doctor's note, police accident report, etc.) must be provided by email **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.

Grading:

3 exams	45%	(Massie 020)
Weekly quizzes	10%	(Massie 206)
In-class activities	5%	(Massie 206)
Final exam (Comprehensive)	15%	(Massie 206)
Online homework	10%	(Cyberspace)
Laboratory.....	15%	(Massie 339)

Final exam: Thu, May 01 @ 8 AM in Massie 206

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

Required materials: *Chemistry, 15/e* (eBook, accessible via BlackBoard)
—Jason 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 2025

—Andy Napper

A non-programmable scientific calculator (TI-30XIIS)

Safety goggles or visorgogs (ANSI Z-87 approved)

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.

In-class/online activities: In-class activities worth various points will be completed, unannounced, during the semester. You must be present for the ENTIRE class period to receive credit for in class activities. No make ups will be allowed; however, the excused absence policy will apply. For some in class activities you may be required to watch an online lecture before coming to class. There may also be some online assignments, which will be completed outside of class.

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 (5 PM, Feb 27, 2025 – MASo20)

Chapter 14 Chemical Equilibrium

Chapter 15 Acids and Bases

Chapter 16 Acid-Base Equilibrium and Solubility Equilibria

Exam 2 (5 PM, Apr 10, 2025 – MASo20)

Chapter 17 Entropy, Gibbs Energy, and Equilibrium

Chapter 18 Electrochemistry

Chapter 19 Nuclear Chemistry

Exam 3 (5 PM, Apr 24, 2025 – MASo20)

Exams 1 – 3: Exams 1 – 3 will be held in Massie 020 from 5 P.M. – 7 P.M.
A make-up exam will be available for students who have a time conflict or an official University excused absence.

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: <https://www.shawnee.edu/syllabus-statements>

Religious accommodations:



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 13th	1	1
January 20th	2	2
January 27th	3	3
February 3rd	4	4
February 10th	5	5
February 17th	6	6
February 24th	7	7
March 3rd	<i>Spring Break (No Lab)</i>	
March 10th	8	8
March 17th	9	9
March 24th	10	10
March 31st	11	11
April 7th	12	12
April 14th	13	13
April 21st	14	14

Laboratories:

1. Check-in, safety, and review worksheet
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 start* of lecture, one week from the date of completion (or the next lecture period in case of holiday/closing/etc.). Late lab reports can be turned in at the start of the next lab period but will be subject to a two-point deduction. Turned in lab reports must have your full name clearly written on the front page to receive a grade. If reports are completed with your assigned lab partner, all names must be clearly written on the front page.

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 Aleks 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 should consist of working problems!

End-of-chapter problems

It is strongly suggested that you work through the following problems to prepare for exams. The answers are given 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.