

Chemistry 1141 Syllabus

General Chemistry I

Autumn 2023

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Office hours:

T	9:00 – 9:30 A.M.
W	10:00 – 12:00 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.	Section 03
R	11:00 – 1:50 P.M.	Section 04

Attendance policy: Attendance at lectures is strongly recommended. Attendance at laboratories is required. *Two or more unexcused lab absences will result in a grade of F for CHEM1141.*

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 1141 Lab Manual, Fall 2023
 — Andy Napper

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

Safety goggles or visorgogs (ANSI Z-87 approved)

Grading:	4 exams 45 % (Library 204) Weekly quizzes..... 10 % (Massie 020) Final exam (Comprehensive) 15 % (Massie 020) Online Homework 10 % (<i>Cyberspace</i>) Laboratory 20 % (Massie 339)
Final exam:	Thursday December 7th, 8 A.M. (Massie 020)
Blackboard course-site:	Notes, handouts, and other useful pieces of information will be available at the following URLs: http://blackboard.shawnee.edu http://chem1141.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. <ul style="list-style-type: none"> • 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.
Lecture material:	We will be covering the following chapters in your textbook:
<i>Chapter 1</i>	Measurement and the Properties of Matter
<i>Chapter 2</i>	Atoms, Ions, and Molecules
<i>Chapter 3</i>	Mass Relationships in Chemical Reactions
	EXAM 1 (Thursday, September 21) – up to and including chapter 3.7
<i>Chapter 4</i>	Reactions in Aqueous Solutions
<i>Chapter 5</i>	Gases
	EXAM 2 (Thursday, October 19) – chapter 3.8 – 5 inclusive
<i>Chapter 6</i>	Thermochemistry
<i>Chapter 7</i>	Quantum Theory and the Electronic Structure of Atoms
<i>Chapter 8</i>	Periodic Relationships Among the Elements
	EXAM 3 (Thursday, November 9)
<i>Chapter 9</i>	Compounds and Bonding
<i>Chapter 10</i>	Structure and Bonding Theories
	EXAM 4 (Thursday, November 30)
Exams 1 – 4:	Exams 1 – 4 will be held in Library 204 (Flohr) from 6 P.M. – 8 P.M. These will be joint exams that all sections of General Chemistry 1 will take together. A make-up exam will be available for students who have a time conflict or an official University excused absence.
University ADA statement:	Any student who believes they may need an accommodation based on a documented disability should first contact the Coordinator of Accessibility Services at 740-351-3608, or SSUAccessibility@shawnee.edu (Hatcher Hall, 1001 4th Street) and schedule a meeting to identify potential reasonable accommodation(s). Students are strongly encouraged to initiate the accommodation process in the early part of the semester or as soon as the need is recognized.

The Office of Accessibility Services will gather relevant information and determine whether an accommodation is warranted. When an accommodation is determined to be warranted, an accommodation letter will be sent to the instructor(s) and student via secure e-mail prior to the semester start date, when possible, or as soon as is feasible.

The Office of Accessibility Services will not disclose the nature of any disability with instructor(s); if the student wishes to discuss the disability with one or more instructors, they may do so.

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

General education program: Chemistry 1141 counts towards the Natural Science component of the General Education Program (GEP) and addresses *Scientific Reasoning*.

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.

Reports must have your full name clearly written on the front page to receive a grade.

Order of labs:

Week Beginning	Tue	Thu
August 21	1	1
August 28	2	2
September 4	3	3
September 11	4	4
September 18	5	5
September 25	6	6
October 2	No-Labs (fall break)	
October 9	7	7
October 16	8	8
October 23	9	9
October 30	10	10
November 6	11	11
November 13	12	12
November 20	No Labs (Thanksgiving break)	
November 27	13 & 14	13 & 14

- Laboratories:**
1. Check-in, safety, and conversions
 2. Accuracy and precision
 3. A forensic analysis of ink
 4. Determining the formula of a hydrate
 5. A forensic chemistry exercise involving empirical formulas
 6. Double-replacement reactions
 7. An introduction to titrations
 8. Calcium carbonate determination of an eggshell
 9. Determining the ideal gas constant, R
 10. Calorie content of nuts
 11. Determining the enthalpy of neutralization
 12. Lewis structures
 13. Molecular modeling using Hyperchem Lite 2.0
 14. Check-out

Grading scale:

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

Note: To receive a grade of C– or higher, you must *either*

- pass (> 59.5 %) at least three of the four semester exams, *or*
- score greater than a 30th percentile on the ACS standardized final

If you fail to meet both requirements, the maximum issued grade will be a D+.

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).

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 Aleks360 assignments, reading the textbook, and quizzing yourself. Reviewing old material every few weeks has been shown to dramatically improve retention of material in college!

Do I have to attend every lecture?

Not attending lecture tends to correlate with doing poorly in chemistry. Do not get into the habit of missing class if you can possibly avoid it. At mid-term I will be reporting your expected grade and attendance to the Registrar. This information will be provided to your academic advisor(s), as well as student support services.

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 tutoring. Stop by the success center and sign up for a (free) tutor!
- Browse my course website for chapter objectives, old exams, lecture 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.

<i>Chapter 1</i>	6, 10, 20, 34, 46, 52, 56, 64, 82, 108
<i>Chapter 2</i>	6, 12, 16, 26, 28, 36, 48, 52, 60, 62, 76, 102
<i>Chapter 3</i>	6, 16, 18, 28, 40, 50, 58, 64, 72, 84, 92, 120
<i>Chapter 4</i>	10, 22, 44, 60, 66, 76, 84, 92, 98, 122, 144
<i>Chapter 5</i>	14, 18, 32, 44, 56, 72, 98, 108, 114, 126
<i>Chapter 6</i>	24, 34, 38, 54, 60, 76, 84, 98, 132
<i>Chapter 7</i>	4, 8, 30, 40, 50, 58, 72, 76, 88, 98, 114, 130
<i>Chapter 8</i>	12, 16, 24, 30, 44, 52, 60, 64
<i>Chapter 9</i>	4, 18, 38, 46, 52, 58, 66, 76, 84, 94, 100
<i>Chapter 10</i>	4, 10, 16, 26, 36, 42, 44, 62, 76, 86

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