Chemistry 1142 Syllabus
General Chemistry 2
Spring 2021

Instructor: Dr. Andrew Napper

Office: Massie 323

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Office hours: M 10-12, W 4–5, F 11–12

Lecture: Online (accessed through BlackBoard via the "Online Lectures" sidebar). Weekly lectures will appear on Mondays at 12:01 AM.

Recitation / Quiz:

M	1:25 PM – 2:20 PM	(Massie 020) – **Section 01**
W	1:25 PM – 2:20 PM	(Massie 020) – **Section 02**
F	1:25 PM – 2:20 PM	(Massie 020) – **Section 03**

A 20-minute quiz will be given at the start of the recitation/quiz session. It will cover material from the previous week's lectures. This will follow with Q&As from lectures and/or structured activities. These activities may be graded and may form part of your weekly quiz grade.

Lab:

M	9:05 AM – 11:55 AM	(Massie 339) – **Section 01**
W	9:05 AM – 11:55 AM	(Massie 339) – **Section 02**
F	9:05 AM – 11:55 AM	(Massie 339) – **Section 03**

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: A Molecular Approach, 5/e*
—Nivaldo Tro
Mastering Chemistry
—Bundled with the textbook or a separate access card
Chemistry 1142 Lab Manual, Spring 2021
—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% (Cyberspace)
Laboratory..... 20% (Massie 339)

Final exam: Wed, April 28 @ noon in Massie 020 (sections 01 and 02)
Fri, April 30 @ 1:30 pm in Massie 020 (section 03)

Final exam information: The final exam is an American Chemical Society standardized final. It is fully comprehensive, covering material from CHEM 1141 and 1142. The SSU chemistry club sells a study guide for this exam.

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

MasteringChemistry You should log on and create your account as soon 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 Monday by 12:01 AM AND will be due the following Sunday by 11:59 PM**
• You will be able to access online assignments on Blackboard. They are located in the "Online Assignments" tab on the left side of the screen. The first time you take an assignment you will be required to log onto your MasteringChemistry account. After doing so, your account will be linked to SSU's BlackBoard site, and you will not have to log in separately.
• The inclusive-access course-fee provides you with access to the textbook and an account with MasteringChemistry at a significant cost savings. The access-code for MasteringChemistry (for students who do not opt out of the inclusive-access plan) is:
PSMTCW-NEUSS-TWINE-FACET-COLZA-WWRSE

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 12	Liquids, Solids, and Intermolecular Forces
Chapter 13	Solids and Modern Materials
Chapter 14	Solutions
	Exam 1 (Feb 11 @ 6pm in LIB204)
Chapter 15	Chemical Kinetics
Chapter 16	Chemical Equilibrium
	Exam 2 (Mar 18 @ 6pm in LIB204)
Chapter 17	Acids and Bases
Chapter 18	Aqueous Ionic Equilibrium
	Exam 3 (Apr 8 @ 6pm in LIB204)
Chapter 19	Free Energy and Thermodynamics
Chapter 20	Electrochemistry
Chapter 21	Radioactivity and Nuclear Chemistry
	Exam 4 (Apr 22 @ 6pm in LIB204)

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.

Disabilities: Any student who believes s/he may need an accommodation based on the impact of a documented disability should first contact a Coordinator in the Office of Accessibility Services, Hatcher Hall, 740-351-3106 to 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. After meeting with the Coordinator, students are then required to meet with their instructor's during the instructor's office hours to discuss their specific needs related to their disability. The accommodation letter will be sent to the instructor and student via e-mail prior to the semester start date. Any questions regarding the accommodations on the letter should be addressed to the Coordinator of Accessibility Services. If a student does not make a timely request for disability accommodations and/or fails to meet with the Coordinator of Accessibility Services and the instructor, a reasonable accommodation might not be able to be provided.

Covid-19 / illness policy: If you feel ill with possible covid-19 symptoms on the day of a lab, quiz, exam, or other in-person graded assignment, you must do the following:

- report your illness to the SSU health team within one-hour
- email your lab/lecture instructor letting them know the reason for your absence and to confirm your report to the SSU health team
- fill-out the following Covid form (requires an SSU login) with your illness/absence details.
- re-submit your online form once you: (1) receive your verification letter from the health team/dept, (2) are given a return to campus date.

Figure 1. Scan with your phone camera to get the form link!

Order of labs:

Week Beginning	Monday blue	Monday gray	Wednesday blue	Wednesday gray	Friday blue	Friday gray
January 11th	1 @ 9:05 AM	2 @ 10:30 AM	1 @ 9:05 AM	2 @ 10:30 AM	1 @ 9:05 AM	2 @ 10:30 AM
January 18th	No lab		2	3	2	3
January 25th	3	2	3	2	3	2
February 1st	4	5	4	5	4	5
February 8th	5	4	5	4	5	4
February 15th	6	7	6	7	6	7
February 22nd	7	6	7	6	7	6
March 1st	*Spring Break (No Lab)*					
March 8th	8	9	8	9	8	9
March 15th	9	8	9	8	9	8
March 22nd	10	11	10	11	10	11
March 29th	11	10	11	10	11	10
April 5th	12	13	12	13	12	13
April 12th	13	12	13	12	13	12
April19th	14 @ 9:05 AM	14 @ 10:30 AM	14 @ 9:05 AM	14 @ 10:30 AM	14 @ 9:05 AM	14 @ 10:30 AM

Laboratories:

1. Check-in and safety
2. Intermolecular forces
3. LABSTER: Matter and phase changes: distil ethanol (**DUE: Sunday, January 31**)
4. Colligative properties: freezing point depression
5. LABSTER: Solution preparation (**DUE: Sunday, February 14**)
6. Determining a rate law using spectrophotometry
7 LABSTER: Reaction kinetics: the essentials (**DUE: Sunday, February 28**)
8. Determining an equilibrium constant using spectrophotometry
9. LABSTER: Equilibrium (**DUE: Sunday, March 21**)
10. pH of acid solutions and salt solutions
11. LABSTER: Advanced acids and bases (**DUE: Sunday, April 4**)
12. Thermodynamics of KNO_3 dissolving in water
13. LABSTER: Redox reactions: discover how batteries work! (**DUE: Sunday, April 18**)
14. Check-out

Blue vs. Gray **If your last name begins with the letter A–K, you will be in the Blue group Otherwise, if your last name begins with L–Z, you will be in the Gray group.**

Labster: These virtual labs are available in BlackBoard and should be completed by the 11:59 pm on the Sunday after your assigned Labster date.

• You will need to access these labs on a desktop or laptop computer using the most recent version of either the *Chrome* or *Firefox* web browser.

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.

Professor Kevin Upton, will be teaching the Monday and Friday laboratories (section 01 and 03). His contact information is:

Telephone:	**(740) 351-3895 or (740) 351-3456**
email:	**kupton2@shawnee.edu**
Office:	**Massie Hall, room 403**

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 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 / watch each week's lectures

☐ After each class/lecture, but before the next class, go through the Example problems in the chapter. Do the "For Practice" problems after each example. The answers are in Appendix IV.

☐ In a separate notebook, answer the problems at the end of each chapter that go over the relevant sections. The answers to the odd-numbered problems are in Appendix III.

At the end of each chapter:

☐ Take the self-assessment quiz. The answers are printed at the bottom of the assignment (upside down).

☐ In your composition notebook, work the Cumulative problems as well as any Challenge problems that are assigned.

☐ 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 (**Bolded and underlined** problems are cumulative/challenge)

Chapter 12	5, 8, 13, 19, 25, 35, 39, 43, 45, 57, 71, 73, 77, **101**
Chapter 13	4, 29, 39, 45, **81, 83**
Chapter 14	2, 6, 11, 13, 15, 23, 24, 29, 31, 49, 53, 55, 61, 67, 77, 81, 85, 93, 95, **103, 109, 119, 131**
Chapter 15	3, 7, 10, 11, 12, 13, 14, 15, 17, 19, 20, 25, 31, 35, 37, 41, 45, 47, 51, 53, 59, 61, 65, 71, 75, 81, **85, 99, 109, 117**
Chapter 16	2, 3, 4, 5, 6, 7, 10, 12, 14, 16, 21, 29, 31, 35, 39, 43, 49, 53, 59, 63, 69, **75, 77, 83, 87, 95**
Chapter 17	4, 6, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 21, 23, 24, 29, 35, 37, 43, 47, 53, 59, 65, 69, 75, 85, 87, 89, 93, 97, 101, 105, 109, 125, **131, 135, 145, 147**
Chapter 18	2, 3, 4, 5, 9, 11, 13, 18, 19, 21, 29, 31, 33, 39, 43, 49, 53, 61, 65, 71, 75, 79, 85, 89, 93, 99, 101, **113, 115, 119, 125**
Chapter 19	5, 6, 7, 11, 12, 13, 14, 15, 16, 20, 23, 25, 33, 35, 39, 43, 47, 51, 55, 59, 63, 69, 73, 77, **87, 95, 101, 107, 109**
Chapter 20	1, 2, 3, 6, 7, 9, 10, 12, 13, 14, 17, 19, 20, 29, 37, 39, 41, 45, 47, 51, 63, 67, 71, 73, 75, 77, 81, 89, 91, 93, 101, 103, ***105, 111, 117, 127, 133, 137***
Chapter 21	3, 4, 5, 6, 10, 11, 14, 15, 20, 24, 31, 33, 47, 51, 65

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