CHEM 121b General Chemistry II Spring 2019

Instructor:	Dr. Thomas C. Holovics
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Lecture Times:	MTThF in Dunham Hall 1002 11:00 a.m. – 11:50 a.m.
	Plus 50 min Workshop in SLW 3330 or 3075 (various times)
Office Hours:	MTTh 12:00pm – 1:00pm & by appointment
Course web page:	http://bb.siue.edu
Prerequisites:	C or better in CHEM 121a
Laboratory:	You should be concurrently enrolled in CHEM 125b (or have passed previously).
	If the lab is full, you have a 1 year grace period
Note:	A grade of C or better is required to proceed to CHEM 241a.

Textbook:

- Tro. *Chemistry: A Molecular Approach*, 4th ed. Prentice Hall ISBN 0321804716. Available at Textbook Rental.

Required Supplemental Material:

- Holovics. *General Chemistry II Lecture notes,* Available at Bookstore.

Course Description and Objectives:
Welcome to CHEM 121b, the second semester in the General Chemistry sequence. These courses are university-level modern chemistry for students majoring in science. CHEM 121b builds on the content of CHEM 121a, so throughout the course I will make references to material covered in CHEM 121a. This semester's topics include solution chemistry, kinetics, equilibrium, acid-base equilibrium, complex ions, thermochemistry, electrochemistry, nuclear chemistry and coordination chemistry.

The objectives of this course include that each student in the class should:

1) Develop knowledge and skills necessary to progress to more advanced science classes.

2) Develop problem-solving skills that are important for all scientists.

3) Develop an understanding of and an appreciation for the connections of chemistry with other disciplines and with everyday experiences.

4) Build confidence in doing and learning chemistry.

Grading: The overall course grade will be calculated out of 1000 points as follows:

Exams	4 Unit Exams x 150 points each	=	600 points	60%
	1 cumulative Final Exam x 100 points	=	100 points	10%
Workshop	13 workshops x 7 points each (and 1 x 9)	=	100 points	10%
Homework	10 x 15pts each	=	150 points	15%
Quizzes	Best 5 quizzes (6 total) x 10 pts each	=	50 points	5%
	Total	=	1000 points	100%

Grading is not competitive – there is no "curve". Grades are assigned based on the following cutoffs, which may in the end be lower but not higher:

$A \geq 850$ pts $850 > B \geq 750$ $750 > C \geq 650$ $650 > D \geq 550$ $550 > F$

or $100\% > A \geq 85\% > B \geq 75\% > C \geq 65\% > D \geq 55\% > F$

Examinations:

Exam 1	Thursday, February 7th	Chapters 13 & 14
Exam 2	Thursday, March 7th	Chapters 15 & 16
Exam 3	Thursday, April 11th	Chapters 17 & 18
Exam 4	Thursday, May 2nd	Chapters 19 & 20
ACS Final	Monday, May 6th , **10:00am** – 11:50 a.m. in the lecture hall	

The 4 exams during the semester will include conceptual and problem solving questions from lecture material and assigned readings. Many (*but not all)* of the problems will be similar (*but not identical*) to problems assigned in lecture, workshop and homework. Although each exam will focus on the specific chapters outlined above, learning subsequent chapters requires building up from a knowledge base of previous chapters. In other words, material from previous chapters can show up on later exams. The final exam is a standardized multiple-choice exam published by the American Chemical Society and will cover all material in this course. The final exam is scheduled according to the published university date. If you know you will have to miss an exam, contact your instructor *as soon as possible* to arrange a time to take the exam early. Any exam missed without a legitimate excuse is scored a zero. Students that miss an exam without contacting the professor within 1 week can be removed from the course.

Exam Regrade Policy:

If you feel that the scoring of an exam was in some way inaccurate, you may submit a request for a regrade within 7 days from the date that the exam is returned. On the front cover page of your exam, write an explanation for the reason for the regrade request and submit it to the professor. Your instructor also reserves the right to regrade the entire exam, not just the part where you think an error has been made. Exams may be photocopied before they are returned.

Calculator Policy:

Non-programmable calculators are allowed for all examinations. The problems encountered in General Chemistry do not require programming capabilities; any basic calculator with square root, exponent, and logarithm functions (base ten and natural log) will be sufficient. Non-programmable scientific calculators are available at many stores (Target, Walmart, OfficeMax, etc.) for about $10.00. I would recommend the Casio fx-115ES. You may not use a cell phone, PDA, or any other electronic device which has a function other than a calculator during examinations. **You should bring your calculator to every lecture.**

Workshops:
All students in CHEM 121b are required to attend their weekly assigned one-hour workshop. The workshop is based on the Peer-Led Team Learning (PLTL) model. In PLTL, a group of up to 10 students interact to solve carefully structured problems under the guidance of a peer leader. The peer leader is a student who has done well in the course previously. Each workshop involves activities designed to focus on central ideas to help students attain the course goals.

For each workshop session, you will earn a score of 7 points (last one 9pts) for proper participation. The following are the expectations of proper participation to receive full credit:

- You must have completed all the self-tests for that unit prior to coming to workshop.
- You must bring your lecture book and textbook to each workshop session.
- Your group must work through and discuss the assigned problems for each workshop period.
- You must work for the entire 50 minute period. If you finish the assigned problems quickly, you can work on other problems in the unit or work on problems from the textbook. If your whole group decides to leave early, your whole group will lose points.

The assigned unit for each workshop can be found on the Workshop Schedule which is the page 8 of this document. At the end of the semester, your workshop point total (out of 100 points) will be used in calculating your final course grade.

There is a make-up workshop if you happen to miss your scheduled workshop. It is Thursday 10-10:50am (SLW 3075). Please note the maximum number of make-up workshops you can attend is 3

Homework:
Regular problem solving work, both calculations and reasoning, is essential to deepening your understanding of chemistry. You are strongly encouraged to work problems from the textbook, checking your answers and bringing questions to workshop leaders, tutors, and the instructors until you feel comfortable with the course content.

To reward the consistent effort that keeping up with course material requires, and to encourage making that consistent effort, there will be regular online homework through the Blackboard/Mastering Chemistry course site. There will be a total of 10 homeworks each will be worth 15 points (for 150 points total). These HWs are designed to help you learn to do long answer problems through calculations problems and understanding concepts through multiple choice problems. Although you must complete your own HW and your HW will be different from your classmates, I would encourage you to form study groups to help with your understandings of the problems. Study groups can be a very good learning tool.

We will be using the mastering chemistry homework system. You will need access to a computer with internet (the chemistry computer labs SLW 2290 provide access to students). It is designed to help you understand what you are doing wrong through various tutorials and problems. The great thing about using the mastery program is that very often it can guide you through the problems using **hints** and explanations. I would encourage you to take advantage of this excellent learning guide. This is where the majority of the problem solving practice will take place so it is very important to set aside ample time to work through these problem sets. Most chapter homeworks will take roughly 2 hours each. You will not get an extension for computer/internet problems. DO NOT WAIT UNITIL THE LAST MINUTE TO DO THE HOMEWORK!

Demonstrations and Computer Animations:
Chemical demonstrations and computer animations may be presented throughout the term. The material covered in demonstrations and animations is important, and will be included on examinations.

Quizzes:
Throughout the semester, pop quizzes will be given as appropriate to encourage you to keep up with the material, attend class and help you and the instructor assess your progress. **Regular attendance is required in this course; if you miss class and miss a quiz you will receive a zero for that quiz.** I understand that unforeseen events do occur, so your lowest quiz grade will be dropped (we will take 6 quizzes and only 5 will count). There will be no make-up quizzes so regular attendance is highly encouraged. If you take all 6 quizzes you will get 5 bonus points.

Attendance and Make-Up Policies:
Regular attendance at lecture is required for success in this course. Should you be unable to attend class on an EXAM date due to a foreseeable circumstance (such as athletic competition, court date, etc.) contact your professor BEFORE THAT CLASS to make alternate arrangements for an exam. Should you miss an Exam due to an emergency, contact your professor (with some sort of proof of your emergency) immediately after class. **There will be no make-ups for missed quizzes.** If you happen to miss class (not on an exam date) you do not need to contact your instructor, just try to obtain the notes you missed from a friend or blackboard.

Tutorial Assistance:
Tutoring is also available through Instructional Services in the Student Success Center Room MUC 1252. The Department of Chemistry offers tutors in SLW 3040. Check the schedule posted outside of the tutor room for more details. You may be asked to fill out a card as part of our monitoring of the tutoring system; this is the only way the chemistry department will find out if there is a tutor that is not helpful. If a tutor is not present during their scheduled time, please report this to the Chemistry Office, SLW 3110.

Services for Students Needing Accommodations
Students needing accommodations because of medical diagnosis or major life impairment will need to register with Accessible Campus Community & Equitable Student Support (ACCESS) and complete an intake process before accommodations will be given. Students who believe they have a diagnosis, but do not have documentation, should contact ACCESS for assistance and/or appropriate referral. The ACCESS office is located in the Student Success Center, Room 1270. You can also reach the office by myaccess@siue.edu or by calling 618-650-3726.

Students with Test Anxiety or Study Skills concerns:
Instructional Services (Student Success Center Room 1252; www.siue.edu/is) sometimes run seminars and have other assistance available for students who are working to build up their study skills and ability to handle stress – stop by their office or check their web page for more information. Counseling Services are also available. They have a suite on the garden level of the Student Success Center in Room 0220 and you can make appointments through their webpage at http://www.siue.edu/counseling/index.shtml. There is also an office located at the junction of North University Drive and Lewis Road.

Dropping from the course:
Deadlines for withdrawing from this course follow the guidelines published by the university. See the calendar at the end of the syllabus (page 9) for the specific guidelines. In case of any inconsistencies, the correct version is that on the SIUE Office of the Registrar website (http://www.siue.edu/registrar/).

Academic Misconduct by Students:
Faculty members retain their traditional authority to take disciplinary action in the event of academic misconduct such as cheating, plagiarism, or classroom disruption. Students have the right to learning experiences that are free of favoritism, prejudice, discrimination, or harassment. In the event of academic misconduct, sanctions may include a failing grade on an individual assignment or on a course as a whole or the recommendation of other sanctions such as dismissal from a major or from the University.

Classroom behavior:
So that all students in the course can experience an academic environment conducive to learning, the following classroom policies will be in effect:

- Entering or leaving a room at times other than the announced beginning and ending of the class is disruptive. Do not gather your belongings until your instructor has announced that class has finished because this is disruptive.
- No food or drink other than water.
- All cell phones are to be turned off while you are in class PLEASE NO TEXTING IN CLASS.
- The following behaviors are generally considered disruptive by your fellow classmates and your instructor: whispering, talking, sleeping, or doing completely off-task things such as playing on your phone ect. Your instructor will ask you to stop doing these things during class and will ask you to leave if the disruption persists.
- **Late to class:** I understand unexpected emergencies happen from time to time and you might be running late. You are welcome to enter the class room if you are running late (better late than never), however please be discrete and sit in the back in order to be the least disruptive towards your classmates and your professor. Coming late to class as a regular occurrence will not be tolerated.

How to do poorly in this course:
Instructors have seen the following behaviors too many times. Students who generally try these things do not do well in this course:

- Skip class often, assuming you can just copy the notes from friends.
- Show up for class only on quiz /test days.
- Wait until right before the exam to begin studying.
- Think that you understand the material without working lots of problems.
- Stop coming to class after getting one good grade. One A cannot balance out 4 F's.
- Expect to catch up after missing much of the semester. Since chemistry knowledge is cumulative, people who fall behind tend to stay behind.
- Wait until the last week of class, come into the professor's office and say, "I think I'm flunking your course. What should I do?" By then, it's too late.
- Even worse, ask this after the final exam!

How to do well in this course:
Recognize from the start that chemistry is a subject that requires a lot of time and work. At the university level, you earn a grade based on your demonstrated mastery of the material, not on how hard you try. With that said, instructors have a compiled a few suggestions that will help you to be successful in this course:

1. *Recognize the time commitment*.

As stated in the SIUE Undergraduate Catalog under Academic Policies and Requirements/Academic Load, "Undergraduate students are expected to spend **at least two hours** in preparation for every hour in class." Therefore, you should not expect to pass CHEM 121a if you do not spend *at the very least* **eight hours a week** outside of lecture studying for this course.

2. *Take an active part in class*.

Come to class prepared to take notes and solve problems each day. Actively take supplementary notes in the course packet and ask questions to clarify material you are unsure about. Even if you are shy about raising your hand in class, your instructor will stop and ask many questions during lecture for you to think about. Actively think about how you would answer these questions rather than wait for the answer. This will help you stay involved and will allow you to determine how well you understand the material.

3. *Remember that learning is your own responsibility.*

The professor will help you out as much as possible, but the professor can't learn it for you. Paying for a university course is like buying a health club membership. Simply making the purchase does not entitle to you to a great physique. A personal trainer can show you what you need to do, but it's up to you to work out regularly if you want to see any results. Also, you can't watch a personal trainer lift weights and assume it will be just as easy for you. Similarly, you will have to work chemistry homework problems yourself on a regular basis to see any results in this course. Don't fool yourself into thinking that by watching the instructor solve a problem you understand it.

4. *Work the problems.*

The number one reason why students fail chemistry is that they don't work enough problems. Actively work on the homework assignments and make sure to know how to solve each problem. Practice the try it yourself problems and with extra examples in the textbook. The self-assessment questions at the end of each chapter are an excellent review of the concepts. Practice with enough problems so that you can work a problem for beginning to end without relying on notes or answer key.

5. *Get help!*

Don't be afraid that you will look stupid if you ask your professor if you are having trouble. It's smarter to get help when you need it than to try to do without it. You can make your sessions with the professors office hours more effective if you have specific things to ask about such as "I tried to work problem 23 but I keep getting 194 instead of 7.2" or "I don't understand why you multiplied by 4 in this example" rather than "Help me, I'm lost" or "I don't get chapter 8." Make use of study partners, workshop groups, and the tutoring room as other sources of help.

Mastering Homework Course Registration Instructions

MyLab for CHEM 121 for Southern Illinois University Edwardsville

Your class will be using a custom-built online educational resource. Once you register, you will have easy access to all your materials with just a few clicks!

To register for your course, you will need:

- A **Student Access Code** from Redshelf
- Your school's zip code **62026**
- A valid email address (easiest to use your SIUe email)

How to Register for and Access Your Course

1) Sign into Blackboard. Enter the CHEM 121 Blackboard Course.
2) Click on the **Homework** link on the left.
3) Click on **RedShelf Homework Access Code** and obtain your pearson access code
   Also sent to you via email
4) Click on **MasteringChemistry Course Home.**
5) Check the box that says **"Do not show again"** and click **Launch.**
6) Read the Terms and Conditions and click **I Accept**.
7) If you have never had a Pearson account click on **Create**, otherwise sign in.
8) Click on **Access Code** under "Use an Access Code".
9) Type the Student Access Code from step 3 in the fields provided and click **FINISH**.
10) When successful, you will see a Confirmation & Summary page with your account information. This information will also be emailed to you.
11) Click the **Go To Course** button on the Confirmation & Summary page to view your course.

Important Note: After this process you should never again be prompted to sign into Pearson. Simply log into Blackboard and click on the **MasteringChemistry Course Home.**

Please make sure you are using either CHROME or FIREFOX. These are the two browsers that seem to work best with Mastering.

Also, be sure that your Pop Up Blockers are allowed.

If you get an error code, try erasing your browser's cache/cookies and try logging in again.

Still need assistance?

Contact: Prof. Holovics
tholovi@siue.edu

Workshop Schedule

Below are the units to be completed for each workshop. *Before coming to workshop*, you need to complete all the self-tests for that unit. After checking your self-tests, you leader will guide you through selected problems in that unit. As an incentive to faithfully completing these assigned problems, one question on each exam will be similar to one of these workbook problems.

Week	***Workshop***	***Page***	***Workshop***
1	None		**No Workshop**
2	1	Pg 2	**Workshop 1 Solutions**
3	2	pg 5	**Workshop 2 Colligative Properties**
4	3	pg 8	**Workshop 3 Rate Laws**
5	4	pg 11	**Workshop 4 Equilibrium Concepts**
6	5	pg 16	**Workshop 5 Chemical Equilibria**
7	6	pg 21	**Workshop 6 Intro to Acids and Bases**
8	7	pg 24	**Workshop 7 Acids and Bases**
9	8	pg 27	**Workshop 8 Buffers and Titrations**
10	9	pg 30	**Workshop 9 Solubility Equilibria**
11	10	pg 34	**Workshop 10 Precipitation Reactions**
12	11	pg 38	**Workshop 11 Free Energy**
13	12	pg 41	**Workshop 12 Oxidation-Reduction Reaction**
14	13	pg 45	**Workshop 13 Electrochemistry**
15	14	pg 48	**Workshop 14 Nuclear Chemistry (9 points)**

Tentative Lecture and Exam Schedule

Monday	***Tuesday***	***Wednesday***	***Thursday***	***Friday***
January 14 Syllabus	January 15 Chapter 13	January 16	January 17 Chapter 13	January 18 Chapter 13 **Intro homework DUE**
January 21 NO CLASS MLK DAY	January 22 Chapter 13	January 23	January 24 Chapter 13	January 25 Chapter 14 **HW ch 13 DUE**
January 25 is the deadline for dropping a course without receiving a grade.				
January 28 Chapter 14	January 29 Chapter 14	January 30	January 31 Chapter 14	February 1 Chapter 14
February 4 Chapter 14	February 5 Open **HW ch 14 DUE**	February 6	February 7 **EXAM ONE**	February 8 Chapter 15
February 11 Chapter 15	February 12 Chapter 15	February 13	February 14 Chapter 15	February 15 Chapter 15
February 18 Chapter 15	February 19 Chapter 15	February 20 **HW ch 15 DUE**	February 21 Chapter 16	February 22 Chapter 16
February 25 Chapter 16	February 26 Chapter 16	February 27 **HW ch 16a DUE**	February 28 Chapter 16	March 1 Chapter 16
March 4 Chapter 16	March 5 Open **HW ch 16b DUE**	March 6	March 7 **EXAM TWO**	March 8 Chapter 17
March 11−March 17: NO CLASS—SPRING BREAK				
March 18 Chapter 17	March 19 Chapter 17	March 20	March 21 Chapter 17	March 22 Chapter 17
March 25 Chapter 17	March 26 Chapter 17	March 27	March 28 Chapter 17	March 29 Chapter 17 **HW ch 17 DUE**
March 29 is the deadline for withdrawing without instructor permission with a grade of W.				
April 1 Chapter 18	April 2 Chapter 18	April 3	April 4 Chapter 18	April 5 Chapter 18
April 8 Chapter 18	April 9 Open **HW ch 18 DUE**	April 10	April 11 **EXAM THREE**	April 12 Chapter 19
April 15 Chapter 19	April 16 Chapter 19	April 17	April 18 Chapter 19	April 19 Chapter 19
April 19 is the deadline for withdrawing with instructor permission with a grade of WP or WF.				
April 22 Chapter 20 **HW ch 19 DUE**	April 23 Chapter 20	April 24	April 25 Chapter 20	April 26 Chapter 20
April 29 Chapter 20	April 30 Open **HW ch 20 DUE**	May 1	May 2 **EXAM FOUR**	May 3 Review for Final Exam
May 6 **FINAL EXAM** **10 – 11:50**	May 7	May 8	May 9	May 10