

**CSUS**  
**Chemistry 1A**  
**Course Syllabus**  
**S2017**

**Dr. Mack**

*“Procrastination is like a credit card: it's a lot of fun until you get the bill.”*

*Christopher Parker*

**Table of contents:**

<b>COURSE INFORMATION</b>	3
LECTURE, DISCUSSION AND LAB MEETING TIMES	3
<b>REQUIRED TEXT PACKAGE AND MATERIALS</b>	4
<b>PREREQUISITES</b>	4
Chem. 1A diagnostic placement exam	4
Math Pre-req's:	4
Chemistry Prerequisites:	5
<b>REPEATING CHEM 1A</b>	5
<b>INTRODUCTION</b>	5
MATH AND CHEMISTRY	6
COURSE LEARNING OBJECTIVES	6
PHYSICAL REQUIREMENTS AND CHALLENGES TO THE COURSE	7
COMMITMENT TO THE COURSE	7
AT RISK STUDENTS	7
NOTE ON WRITING COMPONENTS	8
ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES	8
ADDING & DROPPING CHEM. 1A	8
<b>GRADING</b>	9
<b>CLASS POLICIES</b>	11
CELL PHONES IN CLASS	11
CHEATING AND PLAGIARISM	11
STUDENT CIVILITY	12
EMAIL	12
<b>LECTURE</b>	12
CLASS NOTES	12
LECTURE QUIZZES	12
HOMEWORK	13
QUIZZES	14
PROFICIENCY QUIZZES	14
EXAM POLICY	14
FINAL EXAM POLICY	15
<b>DISCUSSION</b>	15
DISCUSSION ATTENDANCE (READ THIS CAREFULLY)	15
<b>LABORATORY</b>	16
CHEATING IN LAB	16
LAB ATTENDANCE (READ THIS CAREFULLY)	16
LAB DUE DATES	17
PRE-LABORATORY ASSIGNMENTS	17
LAB SCORING	17
LAB MATERIALS	17
<b>SAFETY</b>	18
SAFETY GOGGLES	18
LAB COATS, SHOES & GLOVES	18
LAB CHECK OUT	18
LAB FINAL	18
<b>MATERIAL COVERED IN THE COURSE BY CHAPTER</b>	19
<b>IMPORTANT DATES</b>	19
<b>LECTURE SCHEDULE</b>	20
<b>DISCUSSION AND LAB SCHEDULE</b> (All Discussion & Lab Materials are found on the chem. 1A SacCt website)	21
<b>TEN WAYS TO PASS YOUR NEXT CHEMISTRY EXAM</b>	24

**COURSE INFORMATION**Lecture Instructor:

Dr. Jeffrey A. Mack

Email:

jmack@csus.edu

Office:

SQU 422

Phone:

(916) 278-7094

Office Hours:

See SacCt website

Course Webpage:SacCt (<https://sacct.csus.edu/>)**LECTURE, DISCUSSION AND LAB MEETING TIMES**

Lecture, Discussion and Lab sections MAY NOT be substituted for one another in order to accommodate individual schedule needs. Discussion/Lab sections are paired and cannot be broken up. Discussion/Lab sections 4 – 13 are associated with Lecture section 1, Discussion/Lab sections 15 – 26 are associated with Lecture section 14. Discussion/Lab sections 81/82 are associated with Lecture section 80. No crossing between these assignments is permitted.

*\*Room assignments subject to change.*

Sect	Class Nbr	Cmp	Days	Bldg/Room	Times
1	33674	Lecture	MWF	MND1005	0900AM-0950AM
4	33677	Discussion	M	RVR1004	200PM-250PM
5	33678	Laboratory	W	SQU416	200PM-430PM
6	33679	Discussion	T	HMB109	0800AM-0850AM
7	33680	Laboratory	R	SQU418	0800AM-1030AM
8	33681	Discussion	T	EUR320	1100AM-1150AM
9	33682	Laboratory	R	SQU418	1100AM-130PM
10	33749	Discussion	M	SQU456	600PM-650PM
11	33750	Laboratory	W	SQU418	600PM-830PM
12	33683	Discussion	T	SLN2004	200PM-250PM
13	33684	Laboratory	R	SQU418	200PM-430PM
14	33685	Lecture	MW	MND1005	430PM-545PM
15	33686	Discussion	M	BRH214	1100AM-1150AM
16	33687	Laboratory	W	SQU416	1100AM-130PM
17	33688	Discussion	M	MND3013	200PM-250PM
18	33689	Laboratory	W	SQU418	200PM-430PM
19	33690	Discussion	T	MND1026	0800AM-0850AM
20	33691	Laboratory	R	SQU416	0800AM-1030AM
21	33692	Discussion	T	YSM119	1100AM-1150AM
22	33693	Laboratory	R	SQU416	1100AM-130PM
23	33694	Discussion	T	MRP1002	200PM-250PM
24	33695	Laboratory	R	SQU416	200PM-430PM
25	33751	Discussion	M	SQU450	600PM-650PM
26	33752	Laboratory	W	SQU416	600PM-830PM
80	36034	Lecture	MWF	MND1005	0900AM-0950AM
81	33675	Discussion	M	BRH210	1100AM-1150AM
82	33676	Laboratory	W	SQU418	1100AM-130PM

**REQUIRED TEXT PACKAGE AND MATERIALS**

- Lecture:** Chem. 1A will be using "Chemistry a Molecular Approach", 4<sup>th</sup> ed. by Nivaldo J. Tro  
This text will be used for chem. 1B in S2017  
ISBN-10: 0-13-411283-0 | ISBN-13: 978-0-13-411283-1  
The selected solution manuals and study guide are optional.  
Scantron forms for the exams (3 total): SC882–E (blue, not green)  
Scantron form for the final (1 total): SC982–E (not green)  
Scantron forms for the lecture quizzes (7 total): 815–E (small green ones)
- Homework:** Mastering Chemistry for the Tro 4<sup>rd</sup> text.  
Please refer to the information posted on SacCt.
- Lab:** Scientific calculator<sup>1</sup>, Chemistry department approved lab coat<sup>2</sup>, Safety goggles, Disposable gloves. All of the course experiments can be downloaded from the course SacCt website. I suggest you obtain a 3–ring binder to keep track of all of your lab write ups.
- Discussion:** Scientific calculator and a notebook to work in. There will be discussing topic notes that you must download and bring to class from the course SacCt website each week.  
You should keep a notebook where you work the problems for reference.

**PREREQUISITES****Chem. 1A diagnostic placement exam**

In order to enroll in chem. 1A one must score of 35 (58%) or greater on the chem. 1A diagnostic placement exam. The exam covers algebra and simple mathematics and basic chemistry (consistent with high school chemistry or a preparatory college chemistry class). If you have never taken a chemistry course and you score low on the diagnostic placement exam, it is suggested that you enroll in chem. 4 or a preparatory chemistry course at a local community college. The exam is offered multiple times in the fall, spring and summer. Scores are uploaded to your records automatically in MySacState. Scores are valid for two consecutive semesters. The exam is not offered once the semester begins.

**Math Pre-req's:**

The course math requirements will be strictly enforced. You may need to bring a copy of your transcripts to the first discussion meeting.

1. Have passed MATH 11<sup>3</sup> so that they are ready for the next level math class.
2. or have taken and passed or be concurrently enrolled in a math class ABOVE MATH 11.
3. or have a IAD (Intermediate Math Diagnostic Test) or Calculus Readiness Test score of 27.<sup>4</sup>

Students without the prerequisite math skills will be administratively dropped from the course. Bring a copy of your transcripts, class schedule or IAD score to verify your eligibility on the first day of Discussion or Lab. Students may show transcripts or their IAD Score. IAD score, it must be 27 or greater. **NO EXCEPTIONS!** Student transcripts or class schedules must show the following:

- A passing score of C or better (or CR) in math 11.
- Any math course where math 11 is a prerequisite such as math 26A/B, math 29 or higher.
- **Stats 1 & 50 DOES meet the requirement only if taken at CSUS!**
- Math 17 or 24 DO NOT meet the requirements as math 9 is prerequisite.

Students are required to meet the chem. 1A math requirements even if they have passed chem. 4 with a C or better or are repeating chem. 1A.

<sup>1</sup> Your phone is not to be used as a calculator at any time in class!

<sup>2</sup> Students will not be allowed to participate w/o these items.

<sup>3</sup> Enrollment in math 11 does not qualify as meeting the prerequisite.

<sup>4</sup> For information about the IAD please see: <http://www.csus.edu/math/courses/diagnostic.htm>

**Chemistry Prerequisites:**

All students are required<sup>1</sup> to pass the diagnostic qualifying exam administered prior to the semester.<sup>2</sup> A minimum score of 35 out of 60 questions (58%) of this exam is required in order to enroll in Chemistry 1A.

Students are required and expected upon enrollment in the course to have:

- Passed a complete high school chemistry course (or JC equivalent). (Earth science courses are not sufficient preparation)
- An ability to use a scientific calculator (logs, exponents, scientific notation)
- A working knowledge of dimensional analysis and significant figures.
- College algebra skills. (Stats alone is not sufficient preparation)
- A working knowledge of chemical nomenclature (elemental symbols and names, chemical formulas).
- The ability to write and balance basic chemical equations including simple net ionic equations.
- A working knowledge of the metric system and common British standard units.
- The mole concept. (grams, moles and molar mass)
- Basic atomic structure.
- Concepts from physics. (Energy, work, heat, pressure, motion etc...)
- Concentration and solubility. (Molarity, precipitates, weak/strong electrolytes)
- Plotting data to make graphs using Excel or a similar spreadsheet program.

I've posted review materials on SacCt and Mastering Chemistry to help you prepare for the course. If your math & chemistry background is weak, I strongly suggest that you review this material at least two or three weeks prior to classes beginning.

**Chem. 4:** Students that do not achieve a minimum score are recommended to enroll in Chemistry 4, "Chemical Calculations". Chem. 4 is a three-unit preparatory course designed to help students reinforce the needed skills for success in Chemistry 1A. Chem. 4 is not however a replacement course for high school chemistry. If you have never taken a lab-based course in chemistry, it is advised that you do so at a local community college.

**REPEATING CHEM 1A**

If you are repeating chem. 1A and your diagnostic score has expired, you must retake and score 35 or greater on the exam to enroll in chem. 1A.

- Students that are repeating the course may forgo the lab portion (you will still need to take quizzes and the lab final) if they meet the following criteria:
- A student must have earned 87.5 % of the lab points in the previous semester AND earned a C– overall in the previous semester to forgo the lab.
- Students that have had a semester or more off between the 1<sup>st</sup> and 2<sup>nd</sup> attempt must repeat the lab.

Contact Dr. Mack prior to the beginning of the semester to see if you qualify.

**INTRODUCTION**

You have chosen to take this course as part of your chosen major. Whether you want to be a doctor, biologist, physical therapist, geologist, physicist or chemist, the skills you will develop in this course will help you to become a better student in subsequent classes. We hope that you will see that studying chemistry trains you to learn more effectively as you develop more sophisticated critical thinking and problem solving skills. The following material in this course syllabus is a very important compilation of the course requirements, policies, scheduling, point breakdown, resources, and other useful information. Please read it

---

<sup>1</sup> Students with a C or better in chem. 4 are required to take the exam, however the outcome will have no effect on enrollment.

<sup>2</sup> Go to [www.csus.edu/chem/](http://www.csus.edu/chem/) for information about the exam. It WILL NOT be offered once classes begin.

carefully and keep it in a convenient location for easy reference. Once again always keep in mind that you have chosen to enroll in this course and it is up to you to make the most of your experience. How you perform in this course is directly related to your real effort put forth and your motivation to succeed.

### **MATH AND CHEMISTRY**

"In physical science the first essential step in the direction of learning any subject is to find principles of numerical reckoning and practicable methods for measuring some quality connected with it. I often say that when you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meager and unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely in your thoughts advanced to the state of Science, whatever the matter may be." - Lord Kelvin

In other words, this course uses numbers, equations, word problems and mathematics extensively. If you have math deficiencies or phobias, you will need to put in extra effort to improve your math skills in order to get by. If you have only taken college STATS, you will need to review the math appendix and material in chapter 1 as soon as possible. If you feel your math preparation is weak, I suggest you take math 11 before attempting chem. 1A. I will have an optional math review for you on Mastering Chemistry that you can use prior to the semester beginning.

In order to pass this course, you will need to do as much homework and studying as needed to master the material. There is no minimum checklist that will ensure passing. Chemistry can't be learned by sitting in class, watching others in PAL or looking up answers on the internet. One must put in as much time as needed to master the concepts and techniques to problem solving. Just look at the word "chemistry"... it says... "*Chem is Try*"!

### **COURSE LEARNING OBJECTIVES**

In order to satisfactorily complete the course, students are required to have mastered the understanding and application of the following chemistry topics:

- Chemical nomenclature and classification of compounds (this is a must!)
- Dimensional Analysis and use of Significant figures in chemical calculations.
- Identification and writing of basic chemical reactions including Net Ionic Equations.
- Chemical calculations involving quantitative measures including volumetric units.
- The behavior of gasses, liquids, and solids.
- Basic energetic and kinetic properties of chemical systems
- Atomic and molecular structure and Bonding from a quantum mechanical perspective.
- Properties of solutions and intermolecular forces.
- The development of analytical and problem solving skills that are prerequisite for future chemistry courses.

The goal of chem. 1A is to prepare you for your next chemistry course and beyond. The concepts and skills you learn here will appear over and over again as you progress through the chemistry curriculum. Your textbook does a great job of listing the "Key Terms", "Key Concepts" and "Key Equations and Relationships" at the end of each chapter. These features combined with the review exercises will provide you with ample material to prepare for exams. One cannot succeed in this course on memorization alone. You will need to practice extensively as no two problems are exactly the same. You must learn to learn from your mistakes and seek out help when you get stuck. You must make a commitment to studying and spread that studying out over each day of the week. Think about it, would you save up a week's worth of food and eat it all on Sunday evening? That is impossible to do! Those that keep up with the assigned reading and work, generally do well in the course while those that procrastinate generally do poorly as they find themselves falling behind to the point where it is impossible to catch up. You will find that the material in this course builds upon itself such that what you learn from one chapter will be the foundation for another.

**PHYSICAL REQUIREMENTS AND CHALLENGES TO THE COURSE**Attendance

Students enrolling in this course will need to attend lecture and lab and discussion with a minimum of absences. Although attendance in lecture is not mandatory, data shows that there is a very strong correlation between a lack of lecture attendance and performance in the course. The pace of this course is very fast. Once behind, it is very difficult to catch up since the material builds upon itself. Please be forewarned that **merely attending lecture and copying the instructor's notes** does not guarantee success! You also must keep up with the reading and do as many homework problems (and extra) until you feel comfortable with the material. The lecture period is designed to emphasize that material which is most important. The lecture is presented to help facilitate the learning of the course material; it is your responsibility to master the necessary skills to solve the problems on exams and quizzes.

**COMMITMENT TO THE COURSE**

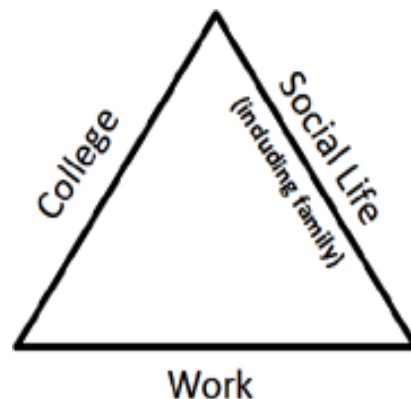
Plan to spend at least 15-30 (depending on your level of preparation) hours per week outside of class time for this course. Chemistry is a challenging subject that requires considerable time to master. Develop a study schedule and stick with it! There are several apps out there that can help.

- Do as many problems as possible. Problem solving is one of the most effective ways to master this material.
- Read the assigned text section the instructor is going to cover each day before going to class. The lectures will be more beneficial if you have done a little preparation.
- Review your lecture notes the evening after each lecture to make sure you understand the material presented.
- Do not wait until the last minute to do your homework or laboratory assignments. If you wait until the last minute, you will not have time to get help.

If you are taking a full load of classes, working and you like to have a lot of "free time", you will inevitably encounter some form of "time crunch" that will significantly affect your performance in this course. To perform well in this course, you will need to evaluate your priorities to ensure that you have enough time to study, complete homework and write up labs. If your priorities are yakking & texting on the cell phone, computer games, online social networking and partying with your friends, then your grade in this course will be adversely affected. Your time is governed by the ***"Reality Triangle"***:

The triangle governs the totality of your time commitments. You must choose only two sides. This means that if you work a significant number of hours and go to school full time and you wish to do well at both, you won't have much of a social life. If you work and like to go out and play, then your academic success may be jeopardized and so on...

**Try as you might, you can't beat the triangle!**

**AT RISK STUDENTS**

A national comprehensive review of general chemistry students revealed several risk factors common to students that underperformed in chem. 1A over the years:

- No High School Chemistry
- A diagnostic placement score of less than 40
- Repeating chem. 1A
- Grade of "C" in chem. 4 or repeated chem. 4

- Weak math preparation (not in pre-calc yet)
- A heavy work load (>20 hrs/week) in additions to your course work.

If you fall under one of these categories, you might consider enrolling into a supplemental adjunct course that will help you with study and time management skills that increase your chance of success in this course.

### NOTE ON WRITING COMPONENTS

The ability to communicate effectively in writing is as important in chemistry as it is in your non-science classes. We expect that the written portions of your assignments, quizzes, homework, and exam questions will demonstrate college level writing technique and style. In other words, nouns, verbs, correct terminology and proper punctuation! If we can't read it, we won't grade it. Poorly written assignments will be penalized accordingly.

### ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

Reasonable accommodations including auxiliary aids and all course documents will be provided to students with disabilities when necessary to ensure that they are not denied the benefits of, excluded from participation in, or otherwise subjected to discrimination in any academic program. The University's goal is to provide an equivalent academic experience and learning opportunity, not to guarantee the outcome of the student's educational endeavor. Students with special needs must personally contact faculty directly regarding the approved accommodation(s) and provide instructors with SSWD's written verification within the first two weeks of classes or as soon as feasible for students who are certified within the semester. No special accommodations can be provided until such documentation is complete and there shall be no retroactive application if the documentation is provided later in the semester. ***Students must submit requests for use of the testing center facility to Dr. Mack no later than one week prior to the exam or final. Students that fail to do so will not receive accommodations and must take the exam/final in the classroom with the rest of the students.*** Since the resources for testing center facilities are limited, students should **schedule all test dates** as soon as possible and return the list of dates to Dr. Mack. Students that require time accommodations for the weekly lab quizzes should also include these dates in the list. I will make sure that the test and quiz materials are at the test center prior to the test dates so long as you abide by the above requirements.

### ADDING & DROPPING CHEM. 1A

#### Adding:

Enrolled students must meet the course chem. 1A diagnostic placement exam requirements prior to the beginning of the term. The exam will not be offered once classes have started. Those students that wish to add must be in attendance in the discussion section in which they are waitlisted during the first meeting. At the close of registration, the waitlists for the discussion/lab sections will be printed. Students will be added to the disc/lab/lec sections based on one's position in disc/lab section wait list if there is room on the first discussion meeting. "Open University" students have the lowest priority for adding. One must also be present in the classroom to add.

#### Dropping:

Will I be dropped from a class if I stop attending? **No! It is the student's responsibility to drop.** Students who fail to officially drop a class may receive an "F" or "WU" grade - both of which carry zero grade points and will lower the GPA. "WU" grades will not be assigned to students that attend through the 2<sup>nd</sup> exam.

How do I drop a class?

- First 2 weeks - Drop by logging on to My Sac State until the drop deadline, the end of the second week of classes. Approval is only needed for those courses that indicate "Instructor/Department Consent required".
- Weeks 3-6 - During this period a student must describe the seriousness of the circumstances that necessitate dropping and get the approval of the instructor and department chair on a Drop



Petition. Most departments require verifying documents, like a letter from a doctor or supervisor. In weeks 3 & 4 drop forms are turned into the department office and no grade is given. In weeks 5 & 6 forms are turned into the Office of the University Registrar and "W" grades are assigned.

- Week 7 through the last day of classes - It is more difficult to drop classes after the sixth week. The drop petition requires signatures from the instructor, the department chair, and the dean of the college which offers the class. Students are required to have a letter from a doctor or supervisor stating that a medical or work-related problem makes it necessary to drop the class. Turn in forms to the Office of the University Registrar; a "W" grade is assigned.
- Finals Week - No drops allowed.
- Withdrawals approved during the last three weeks of the semester will not count towards the 18-unit maximum; however, a grade of "W" is still recorded on the transcript. Students will receive a final grade of "WU" or "F" in course(s) they fail to officially drop by the prescribed deadlines. "WU" grades will not be assigned to students who attend through the second exam. No drops are allowed after the last day of instruction. A grade of incomplete, "I" can only be assigned to students that have a passing grade and have completed at a minimum of  $\frac{3}{4}$  of the course.

Please refer to CSUS WebPages and catalog for deadline dates, procedures and policies. Instructors have the authority to administratively remove any student who, during the first two weeks of instruction, fails to attend any two class meetings (for courses that meet two or more times a week) or one class meeting (for courses that meet once a week).

## GRADING

Your final grade is based on the class distribution of the following points.

Exams:	(3 × 100 points)	300 points
Quizzes:	(10 × 10 points)	100 points <sup>1</sup>
Lecture Quizzes:	(5 × 5 points)	25 points <sup>1</sup>
Final exam:		200 points <sup>2</sup>
Lab Final:		50 points <sup>3</sup>
Proficiency Quiz:	(2×25 points)	50 points
Homework:	(your % × 100 points)	100 points <sup>4</sup>
Lab Experiments:	(your % × 175 points)	175 points <sup>5</sup>

Total: 1000 points<sup>6</sup>

- Grades are not open to negotiation or discussion. How you are graded elsewhere has no bearing on how you are graded in chem. 1A.
- Homework and lab points are scaled to a total; these "points" are not equivalent to an exam, quiz or final points.
- Please note also that the majority of your grade (70%) is determined by exams, quizzes and the final exams
- The minimum "C" grade will be set to 73% to assure that you will have the minimum skill set to prepare you for chem. 1B

<sup>1</sup> The lowest 2 quiz scores will be dropped at the end of the semester.

<sup>2</sup> To pass the course you must take the final exam.

<sup>3</sup> To pass the course you must take the lab final exam.

<sup>4</sup> HW points are normalized to your % of the overall points earned. See the section on HW grading for how HW extra credit points are applied to your total.

<sup>5</sup> All labs must be completed and submitted in order to pass the course. (See lab policy)

<sup>6</sup> Please note that quizzes, exams and finals account for 72.5 % of the course points; You will not pass with a C or better with homework and lab work alone.

**Grade Definitions**

**A:** Exemplary achievement of the course objectives. In addition to being clearly and significantly above the requirements, work exhibited is of an independent, creative, contributory nature.

**B:** Superior achievement of the course objectives. The performance is clearly and significantly above the satisfactory fulfillment of course requirements.

**C:** Satisfactory achievement of the course objectives. The student is now prepared for advanced work or study. Note: The letter grade "C" does not imply satisfactory achievement at the graduate level. ***(Students are required to earn a grade of "C" or better to move on to chem. 1B)***

**D:** Unsatisfactory achievement of course objectives, yet achievement of a sufficient proportion of the objectives so that it is not necessary to repeat the course unless required doing so by the academic department.

**F:** Unsatisfactory achievement of course objectives to an extent that the student must repeat the course to receive credit.

**WU:** Withdrawal Unauthorized indicates that the student did not withdraw from the course and failed to complete course requirements. It is used when, in the opinion of the instructor, completed assignments or course activities or both were insufficient to make normal evaluation of academic performance possible. For purposes of grade point average, this symbol is equivalent to an "F". Grades of "WU" will NOT be assigned to any student that has taken the second exam.

Please review the University's Academic Policies for further information.

<http://catalog.csus.edu/current/first%20100%20pages/academicpolicies.html>

Your lab instructor will keep a spreadsheet with your scores and overall percent of points in the course, you need to keep track of all returned papers. A three ring binder will work well for this. Your summary of your scores will be posted on SacCT after each exam. You can check with your lab instructor on a weekly basis for your progress in the course. Since your exams and quizzes make up 70% of your grade, look at those numbers to gauge how you are doing in the course.

Your grade is solely determined by your overall percentage of points earned over the course of the semester. Grades cannot be determined by effort or intent. The majority of your grade is dependent upon your performance on the exams, quizzes and final. You can't rely on homework and the lab to pass the course as the majority of the course points come from exams and quizzes. There will be **NO EXTRA CREDIT** assigned in this course other than exam and quiz bonus questions and homework tutorials. Deadlines for assignments will be strictly enforced. No late assignments will be accepted without the lecture instructor's consent. Incomplete grades or WU's are assigned only where merited by the university and chemistry department policies.

**GRADES ARE NOT OPEN TO NEGOTIATION****GRADING SCALE**

90.0 to 100%	A- to A
80.0 to 89.9%	B- to B+
70.0 to 79.9%	C- to C+
50.0 to 69.9%	D- to D+
< 50 %	F

(A cutoff is 93%, B cutoff is 83%, C cutoff is 73% and so on...)

**Grading and partial credit**

Since chemistry is an exact science, most of your answers will either be correct or incorrect. When worked problems are given (Labs included) all steps shown must lead to the answer given. Partial credit may be awarded when the method presented is correct, but there is a minor error in the calculation. No credit shall be given for attempts that clearly show an incorrect method was applied. In other words, just because you gave an answer does not mean it merits credit. Be aware that re-grading of material and partial credit are severely limited in this course. Any grading that involves scantron forms may not be resubmitted for re-grading. Only the marks placed on your forms at the time of the exam or quiz will be accepted so when you mark your scantron forms, please be sure to do so with care.

**CLASS POLICIES****CELL PHONES IN CLASS**

The use of cell phones in any class activity is strictly prohibited. When you arrive to lecture, lab or discussion promptly turn off and stow away your cell phone and stow it away. You are in class to learn, not play with your toys. Students observed using cell phones in class will be asked to leave. Repeated violations may result in dismissal from the course. If you can't sit for an hour or two without texting your friends or playing on social media, then you do not belong in college. If you have an emergency issue that requires you to monitor your phone, please discuss this with your instructor prior to class.

If you suffer from a cell phone addiction issues, there are several distraction blocking apps that you can download and install that allow you to lock out texting or web surfing while in class or when you are studying/doing homework. Apps like Flipd, BreakFree, AppBlock etc... can be found on Google Play or iTunes.

**CHEATING AND PLAGIARISM**

All graded work (including quizzes, exams, homework, and lab reports) must be your own. Students found taking pictures of exams and quizzes, copying or assisting other students in copying any graded class assignments will be dealt with according to the University statement on Academic honesty:

<http://www.csus.edu/um anual/AcademicHonestyPolicyandProcedures.htm>

A student tutorial on plagiarism is also available: <http://library.csus.edu/content2.asp?pageID=353>

**Examples of cheating and plagiarism include but are not limited to:**

- Copying data or calculations from old labs or pre-labs
- Copying data or calculations from fellow students on labs or pre-lab
- Fabricating data for lab reports (dry-lab)
- Forging lab instructor signatures on labs.
- Copying answers from fellow students during quizzes and exams
- Communicating with fellow students during quizzes and exams
- Using a cell phone during quizzes and exams
- Using a "cheat-sheet" during quizzes and exams
- Obtaining or providing homework answers from or to fellow students
- Obtaining or providing information about quizzes and exams from or to fellow students
- Attending another section to try to obtain an exam or quiz
- Altering graded work after it has been returned, and then submitting the work for re-grading
- Allowing another person to do one's work and submitting it under one's own name
- Preprogramming a calculator to contain answers or other unauthorized information for exams

Students found to be in violation of the university academic honesty policies will be immediately referred to the office of Student Affairs.

## STUDENT CIVILITY

Please remember to treat your laboratory instructors and stockroom staff with the respect that you would give any professor. Remember, if you treat others with respect, then they in turn will treat you with respect. Any behavior that is deemed to be inappropriate will be reported to the Office of Student Conduct. Please review the University Policies on student conduct:

<http://www.csus.edu/umannual/student/UMS16150.HTM>

## EMAIL

If you wish to contact me or your discussion/Lab instructors, you must do so through your saclink account. Emails from your non-CSUS accounts, phone or other portable devices will not be read. Any emails that are deemed to be inappropriate will be deleted without a response. Please state the nature of your email in the header line. Emails that are sent after 5 pm or on weekends may not be responded to until the next school day.

## LECTURE

In order to maximize your lecture experience, it is imperative that you have **read the text material covered prior to coming to class**. I will not cover every section and every problem covered in the text. A significant part of your learning will come from working problems on your own. Just coming to class will not be enough to get by in this course. If you are struggling with the material at any time you need to go to office hours. I do not take attendance, however have in the past correlated attendance with performance in the course. I encourage you to bring questions. If you have a question on a topic, there are likely several of your fellow students that have the same question! When I ask questions in lecture, please participate, sometimes your answers bring up further questions that need clarification.

## CLASS NOTES

The lecture portion of the course is intended to be a secondary presentation of the material that you are responsible for mastering. You need to have at a minimum read through the sections of the text that correspond to the lecture material prior to class in order to maximize the lecture learning experience. Ideally, you will have started working on your homework as well. The lectures for this course will be presented using PowerPoint. I do not intend for you to copy everything I put up! (They are called notes, not copies...) I WILL NOT post the notes prior to class as I want to engage you during lecture, a task that is not effectively achieved if you are staring at a piece of paper. The lecture notes will be posted by the end of the day on my SacCt website in .pdf format for your review. I suggest that you download the notes I post on SacCt and compare them to your written notes from class, in order to fill in anything, you may have missed. You should do this before you go to bed the day of your lecture.

## LECTURE QUIZZES

Attendance in lecture is not monitored, however over the course of the semester there will be seven (7) five-point lecture quizzes randomly administered about every two weeks. Sometimes the quizzes will be offered at the beginning of class, sometimes during and sometimes at the end of class. Two (2) of these quizzes will be dropped at the end of the semester. If you are absent on the day of a quiz, then that will count as dropped quiz, one cannot make up a lecture quiz. You are required to have a scantron form 815-E, a pencil and your calculator with you in order to take the quiz, your instructor will not have extra forms or calculators available. The quiz questions (typically 2 or 3 of them) will come from your text reading, HW or lab for that week. There may be a week where two quizzes are offered. ***Any scantron forms submitted without your Lab section number will not be graded and disposed of in the recycle bin!***

**HOMEWORK**

Always keep in mind:

**"THE DUE DATE IS NOT THE START DATE!"**

Don't wait until the last minute to start working on your HW assignments... you will never finish! You need to spread your work out over several days of the week in order to finish on time. If you work 5-6 problems each night, you will easily be done by Friday which leaves the weekends to get ahead. I fully expect you to work on chemistry at least 5 days a week! (This is a 5-unit class you know...)

DO NOT use "yahoo answers" or Google HW questions just to get points. The point of doing your HW is to develop and learn problem skills so that you can pass the exams and final. If you cheat your way through the HW, you will only cheat yourself. The minimal collection of HW points you earn by cheating will not help you pass the course in the long run. You will not pass this course on HW and Lab points alone. You need to do well on the exams and final to pass the course.

Homework will be assigned and recorded using the Mastering Chemistry component of your text package. When you purchase the text package, you will find information and a login password that will direct you to the Mastering Chemistry website. DO NOT LOSE THIS INFORMATION! If you purchase the text elsewhere, you may purchase an access code from the *MASTERING CHEMISTRY* website:

<http://www.masteringchemistry.com/>

Course code:

**MCMACK31855**

Homework assignments will correspond to the lecture timeline. Most often I will have covered the material in lecture already. All assignments have fixed deadlines, if you put off working the problems until the last minute you will likely not finish in time and you will receive only partial credit. Homework due dates and times will vary throughout the week, rarely on weekends, so you will need to login to Mastering Chemistry often to check for new assignments. If you fail to complete an assignment by the due date, you may still submit answers late, however there is a 25%-point deduction per day for each answer submitted late.

From time to time I will assign additional homework via the Mastering Chemistry system in the form of pre-lecture tutorials and post-lecture problems as extra credit. There will be limited window of time to complete these, so you need to check the Mastering Chemistry site often to see when they pop up.

Please direct any issues with the Mastering Chemistry system to the Mastering Chemistry help desk as I do not manage the system. The Mastering Chemistry system is easy to work especially after you go through the required tutorials. **IF YOU CAN MAKE FACEBOOK, INSTAGRAM AND SNAPCHAT WORK, IF YOU CAN UPLOAD APPS TO YOUR CELL PHONE, THEN YOU CAN MAKE MASTERING CHEMISTRY WORK JUST FINE!**

Mastering Chemistry will keep track of your scores; it is up to you to keep up with the assignments. At the end of the semester, I will apply your total percentage of correct answers to 100 points and add this into your overall total.

- **DO NOT OPEN MULTIPLE ASSIGNMENTS SIMULTANEOUSLY!**
- There will be no whining or excuses for not doing your homework.
- If you procrastinate and fail to do the work on time or you don't make arrangements to access the internet, there will be no extensions of due dates.
- If you are playing games or social networking while logged into Mastering Chemistry, you may find that Mastering Chemistry "times out". If this happens, you will lose credit for the work you did not finish.

By signing up for this course, you have agreed to the policies and requirements set forth in the syllabus. Keep in mind, you do homework to learn, the points are incidental. Please see the information posted on SacCt for more details on how Mastering Chemistry works.

## QUIZZES

Multiple choice and short answer quizzes over the lecture and laboratory material will be given weekly at the beginning of Discussion or Lab. (see the schedule) Each quiz is worth 10 points. It will cover topics from the previous week's lecture, discussion and current lab material. There will also be a 2-point bonus question on each quiz! If you are late, you will not be afforded any extra time to complete the quiz. If you miss a quiz, you may not make it up. If you miss a quiz due to an excusable event, contact Dr. Mack to make arrangements.

## PROFICIENCY QUIZZES

Two 25-point proficiency quizzes will be administered in lab during the 3<sup>rd</sup> and 4<sup>th</sup> weeks (see lab schedule). The first of these quizzes will cover nomenclature, the second will cover dimensional analysis and stoichiometry. Statistics show that mastery of these topics is essential for successful continuation in the course. It is up to you to study and do well on this exam! If you do not pass both of these quizzes, you should consider dropping the course before the first exam. I have data that correlates the score of your proficiency exam and the first exam. Data also shows that if you do poorly on the first exam, you will likely not pass the course with a C or better.

## EXAM POLICY

There will be three (3) exams given (one approximately every four weeks). You will need a scantron form SC882-E (available at the bookstore) for each exam. The exams will be based on concepts covered in the text, lecture and lab. The exam questions will consist of topics and concepts covered in HW, lecture, discussion worksheets and lab calculations. I will provide you with a study guide on the SacCt website to help you prepare for each exam. In addition to this, your discussion notes and the chapter summaries will provide you with more than enough material to prepare for an exam, assuming you are keep up with your coursework. You should plan on beginning your preparing for an exam about one week prior to the exam date. If you wait until the last minute to do so, your performance on the test will likely be poor.

I will not provide you with a "practice test". Practice tests actually hurt students more than they help. Students who receive practice tests tend to memorize what's on the practice test rather than try to learn the material. As a result, they learn less. I also do not waste class time reviewing material. Professors that schedule reviews actually do their students a disservice by providing them with an excuse for procrastination. Most students will look at a review session as the starting point for learning the course material. The fact is, if you are not keeping up with the material, a single review session will not help you magically learn what has been covered for weeks in the class. Finally, assuming once again that you have been keeping up with the course material, there will be ample time provided for you to complete each exam and quiz. If you fail to complete an exam or quiz in the time allotted, you need to accept the reality that you were not adequately prepared to take that exam or quiz in the first place. Please rid yourself of the idea that more time equals a better grade. When it comes to the physical sciences, the truth is "either you know it or you don't!"

**MISSED EXAMS****No makeup exams will be offered.**

If circumstances arise such that you can't take an exam on the assigned day, you are more than welcome to take an exam early. Email Dr. Mack to arrange the early exam at least one week prior to the date. Please contact Dr. Mack as soon as possible regarding an exam absence. Without documented verification, a missed exam will count as a zero towards your point total. Documentation includes: Signed letters from a physician on letterhead, police reports etc... In the case where an exam is missed, it will be deducted from your overall total. (This however puts more weight on the rest of your work).

- **All of the exams and quizzes are closed book. You will need to bring a calculator and pencil (which I prefer) to each exam. Scratch paper, scientific constants and periodic tables will be provided. You will need to memorize all basic equations; I will provide you with complicated or unusual equations. No Note cards/cheat sheets will be allowed.**
- **All cell phones and electronic devices must be turned off and stowed away during exams. Students found using cell phones during exams will be immediately dismissed from the exam and referred to student affairs.**
- **Once an exam has started, students may not leave the room. If you leave, you must submit the exam to be graded as is.**
- **If you are late for an exam, you will not be afforded any additional time.**

**FINAL EXAM POLICY** The final exam is comprehensive with a slight weight towards the latter material. You will need a scantron form SC982–E. (available at the bookstore) All students must take the final in order to pass the course. No late or make up final exams shall be offered after finals week is over. **FINAL EXAMS WILL NOT BE RETURNED.** You may review them in my office by appointment.

**DISCUSSION**

Each week you will attend one-hour discussion section.

**ATTENDANCE IS MANDATORY!**

You must download and print the notes or bring your tablet/laptop to class each meeting. Use of cell phones in discussion is strictly prohibited. When you arrive, turn off your phone and stow it in your backpack or purse.

The discussion sections will consist of problem solving sessions where you will work in groups to help enhance the understanding of the course material. The material presented in discussion will cover topics and concepts from the previous week's lecture and the current week's homework. The goals and outcome of these exercises will be to strengthen your critical thinking and problem solving skills in chemistry. Each week there will be a set of notes posted on SacCt for your discussion meeting. You are required to print and bring copies to class.

***YOUR INSTRUCTOR WILL NOT HAVE COPIES!***

***Failure to bring these materials will affect your discussion grade.***

If you wish to use a laptop or tablet to view the notes, that is fine. You may not use your phone! Students that reputedly fail to bring the notes to class will receive zero (nada, zip, nothing) points for any online discussion work. (see below)

**DISCUSSION ATTENDANCE (READ THIS CAREFULLY)**

**If you have two (2) or more unexcused absences in discussion, there will be an automatic 50-point deduction from your homework points. If you have four (4) or more unexcused absences from discussion, you will receive an automatic grade of "F" in the course regardless of your overall performance.**

Any absences must be accompanied by a documented reason. If you cannot attend a discussion meeting due to a prior commitment, you may attend another section with Dr. Mack's approval prior to the meeting. You must make arrangements ahead of time to attend another section. Habitual tardiness or leaving early without completing the worksheets also counts towards your attendance record. If you have issues that prohibit attendance, please contact your instructor as soon as possible. **YOU MAY NOT HOP FROM SECTION TO SECTION EACH WEEK!**

### **LABORATORY**

You will be required to download and print out laboratory materials throughout the semester from SacCt. It is your responsibility to have the appropriate printed materials when you come to lab. You will not be allowed to participate in lab without your own copy of the lab materials. Your lab instructors will not have copies! Prior to leaving lab, you are required to obtain initials from your lab instructor on any data accumulate in that day's experiment to verify your attendance.

**All** experiments must be downloaded & printed from SacCt **PRIOR TO CLASS**. Your instructors **WILL NOT** have copies.

### **CHEATING IN LAB**

Any students found using one another's data, graphs or calculations will receive a score of zero for the lab for the first violation. (This includes all persons involved.) Subsequent violations will result in those involved being referred to student affairs for violation of CSUS academic honesty policies. The consequences can range from removal from the course to expulsion from the university. Students submitting made-up labs with no instructor signatures are considered to be in violation of the above policy.

### **LAB ATTENDANCE (READ THIS CAREFULLY)**

Attendance in laboratory is mandatory. One cannot hop from lab to lab because you overslept or you did not feel like going to lab on a given day.

If you fail to complete a lab in the allotted time due to lack of preparation, you **WILL NOT** be allowed to make up the rest of the experiment in another lab. You will only receive credit for the work completed.

If you have an issue that prevents you from making it to lab, please contact your lab instructor (not Dr. Mack) as soon as possible beforehand.

All absences from lab require documentation.

If you miss a lab for a legitimate reason:

- You have one week to make it up. (That's it!)
- Prior to making up a lab, you must notify the instructor of the lab section that wish to attend to complete the missed experiment. (see SacCt)
- You must obtain the signature of that instructor on your lab report sheet for it to be valid.

**If a student has two (2) or more unexcused lab absences over the course of the semester, that student will receive a grade of "F" regardless of standing in the course.**

**If a student fails to complete and submit all of the labs assigned over the semester, that student will receive a grade of "F" regardless of standing in the course.**



**LAB DUE DATES**

**Laboratory reports are due at the beginning of the following discussion section after completion of the experiment. (Some experiments will be due at the end of the period) You have plenty of time to write up your lab, DO NOT PUT IT OFF!**

Labs that are submitted late or incomplete will receive an automatic 25% deduction of points (in addition to any subsequent deductions upon grading). The lab must be resubmitted by the next lab period in order to be eligible for grading. After such time, the lab must still be submitted; however, it will be scored with a zero.

**Always keep in mind: "THE DUE DATE IS NOT THE START DATE!"**

**In order to pass the course, all labs must be submitted by the end of the semester. If a student fails to submit (completely and legitimately) even one lab, that student fails the course regardless of overall score.**

**PRE-LABORATORY ASSIGNMENTS**

Most of the experiments have pre-lab assignments that must be completed before coming to lab to help you perform the associated experiment. Before attempting the pre-lab assignment, **READ THE EXPERIMENT!** (twice) Most of the answers are in the **EXPERIMENT!** The pre-lab assignment is due at the beginning of the lab period. Do not copy from your fellow students or old pre-labs. At the end of the semester you will have a lab final that covers your pre-lab and lab calculations. If you manage to copy throughout the semester, you will fail this exam!

If you do not have your pre-lab assignment completed by the beginning of your class, then you must make up the lab at another time and you may not take the quiz that day (zero score). A missed lab due to a missing or incomplete pre-lab is considered to be an unexcused absence which counts towards your total.

**LAB SCORING**

Labs are graded based on significant figures, correctness of calculations, precision and accuracy. Some labs have unique "unknowns" to each student. It is your responsibility to write down your unknown number on your lab sheet. Using another's unknown results or results from a previous semester is considered to be cheating and such issues will be dealt with accordingly.

At the end of the semester, the sum of your lab points will be normalized to a total of 175 points (17.5% of your grade). For example, if you earned 85% of the assigned points, then 149 points would be added to your overall point total. Your lab grade will not carry you through this course. You need to average ~70% on the exam, quiz and final points to pass the course with a "C". Please be aware that some of the exam materials will come directly from the lab calculations, so it is in your best interest not to copy from your classmates.

**LAB MATERIALS**

Students must have a chemistry department approved lab coat, goggles, gloves and appropriate shoes & clothing to participate in lab. If you do not meet these requirements, you will not be allowed to participate in lab and be required to make up the lab as if you were absent. You will need a scientific calculator (your phone may not be used as a calculator) and lab printouts downloaded and printed from SacCT for each lab period. Your instructor will not have copies. If you are not prepared for lab, you will not be allowed to participate! (see below)

**SAFETY**

You will be given a safety presentation during the first week of lab. You will then sign a "contract" promising to abide by the safety rules of the laboratory. Failure to follow the safety rules will not be tolerated. (A copy of the safety policy is provided at the end of this syllabus)

**SAFETY GOGGLES**

Approved safety goggles are required. (consult the stockroom if you have questions.) You will be required to wear approved safety goggles whenever glassware or reagents are out in the lab regardless of what you are doing. Repeated violations will result in dismissal from the course. Safety glasses are not approved for student use. The CSUS Chem. Club offers sales of very nice and comfortable goggles at the beginning of each semester. Look for signs near the 4<sup>th</sup> floor stockroom in SQU hall.

**LAB COATS, SHOES & GLOVES**

Lab coats are required for all lab activities. Your lab coat sleeve must cover your wrists and the length must be below your knee at least to the calf area. You may not wear shorts or short skirts under your lab coat. All skin from the lab coat down must be covered and "tights" are not considered as adequate coverage. Appropriate footwear must cover your foot top completely and have no toe openings. You will be required to purchase single use gloves for protection when needed in the lab. Gloves are not permitted outside of the lab rooms under any circumstances.

**LAB CHECK OUT**

It is your responsibility to check out of your locker even if you drop. Students who fail to check-out of their assigned locker will have a hold placed on their records in addition to being assessed a check-out fee. You will not be allowed to enroll in subsequent semesters until the fee is paid.

**LAB FINAL**

In the last week of lab there will be a 50-point lab final that covers concepts and calculations emphasized throughout the lab. You can prepare for this by reviewing you returned labs. **All students must take this exam in order to pass the course, EVEN IF YOU ARE SKIPPING THE LAB AS A REPEATING STUDENT.**

**RESOURCES FOR HELP**

Your professor and the lab/discussion instructors will hold office hours each week in SQU 502. In addition to your instructors, there will be additional office hours staffed by instructors for other chemistry courses. These office hours will be posted outside the HELP Office (SQU 502) and on the SacCt. You are welcome to go to ANY of the office hours that fit your schedule. Please keep in mind, instructors are there to help you learn, not to write-up your lab reports or do your homework for you!

**MATERIAL COVERED IN THE COURSE BY CHAPTER**

Over the course of the semester we will cover chapters 1 – 14 of the text.

NOT ALL OF THE MATERIAL WILL BE COVERED IN LECTURE! SOME MATERIAL WILL BE COVERED IN LAB ONLY AND OTHER MATERIAL WILL BE COVERED IN YOUR READING AND HOMEWORK ONLY!

Covered in Lecture	Read on your own	Covered in Lab	Skip
	Chapter 1 & 2		
Ch. 3.1–4, 3.8–10	Ch. 3.5, 6, 7 & 11		Ch. 3.12
Ch. 4			
Ch. 5			
Ch. 6	Ch. 6.10		
Ch. 7			
Ch. 8	Ch. 8.2 & 9		
Ch. 9			Ch. 9.11
Ch. 10			
Ch. 11			
Ch. 12	Not covered in chem. 1A.		
Ch. 13	Ch. 13.2 – 4	13.5, 6, 7	13.8
Ch. 14			

**IMPORTANT DATES**

Instruction Begins:	January 23 <sup>rd</sup> (Discussion & labs <b>WILL</b> meet during the 1 <sup>st</sup> week)
Last day to drop via MySacState:	February 3 <sup>rd</sup>
Proficiency Exams (in lab)	Week 3 & 4
Last Day to drop w/o a "W"	February 17 <sup>th</sup> (Friday of week 4)
Exam 1:	February 22 <sup>nd</sup> (in lecture)
Spring break	March 21 <sup>th</sup> - 24 <sup>th</sup>
Exam 2:	March 29 <sup>th</sup> (in lecture)
Cesar Chavez Holiday	March 31 <sup>st</sup> (campus closed, no classes)
Exam 3:	April 26 <sup>th</sup> & 27 <sup>th</sup> (in lab sections)
Lab Finals: (last day of labs)	May 10 <sup>th</sup> & 11 <sup>th</sup> (last lab day, check out of lockers)
Last Day of Instruction:	May 12 <sup>th</sup>
Mastering Chemistry shuts down	11:59pm May 16 <sup>th</sup>
Final Exams	Section 1 & 80: May 17 <sup>th</sup> 8:00 – 10:00 am Section 14: May 18 <sup>th</sup> 3:00 – 5:00 pm

(please note that you may only take an exam or the final in another section with Dr. Mack's permission)

## LECTURE SCHEDULE

Week	Week of	Topics Covered in Lecture	Text Chapters
	Prior to class	Chapters 1, 2 & 3 should be reviewed prior to class. Most of this material will not be covered in lecture.	
1	1/23	Course Introduction Problem solving in Chemistry using Dimensional Analysis (Ch. 1.8) Atoms, Isotopes, Compounds & the Mole (Ch.2)	1 & 2
2	1/30	Chemical Bonds (Ch. 3.2) Chemical Formulas & Molar Mass (Ch. 3.7) Chemical Formulas From Mass data, % Composition, Hydrated Salts & Combustion Analysis (Ch. 3.9)	3
3	2/6	Chemical Reactions (Ch. 3.10) Reaction Stoichiometry (Ch. 4.3) Solution Stoichiometry (Ch. 4.4) Solubility Rules and Types of Reactions in Solution: Net Ionic Equations (Ch. 4.5 - 4.8)	3 & 4
4	2/13	Oxidation and Reduction Reactions (Ch. 4.9) Gas Laws & the Ideal Gas Law (Ch. 5.2 - 5.5)	4 & 5
5	2/20	Mixtures of Gasses, Gas Stoichiometry & Kinetic Molecular Theory (Ch. 5.6 - 5.9) Thermochemistry: Heat & Work, the First Law (Ch. 6.2 - 6.5) <b>Exam 1: Chapters 1 to 4</b> <b>Wed. 2/22</b>	5 & 6
6	2/27	Reaction Enthalpy (6.5) Coffee Cup Calorimetry (Ch. 6.7) Hess's Law (Ch. 6.8 & 6.9)	6
7	3/6	Atomic Structure: Light (7.2) The Bohr Atom (7.3) Atomic Spectroscopy (7.4)	7
8	3/13	Quantum Mechanics & the Atom (7.5) Atomic Orbitals (7.6)	7 & 8
9	3/27	Electron Configurations (Ch. 8.3 - 8.5) Periodic Trends (Ch. 8.6 - 8.8) <b>Exam 2: Chapters 4.4, 5, 6, 7</b> <b>Wed. 3/29</b>	8
10	4/3	Chemical Bonding 1: Lewis Theory	9
11	4/10	Chemical Bonding 2: VSEPR Theory, Valence Bond	9, 10
12	4/17	Chemical Bonding 2: Molecular Orbital Theory	10
13	4/24	Intermolecular Forces and Properties of Liquids (Ch. 11.2 to 11.8) <b>Exam 3: Chapters 8 to 11 &amp; Ch. 13.5 - 13.7*</b> <b>In labs Wed 4/26 &amp; Thurs 4/27</b>	11
14	5/1	Chemical Kinetics	14
15	5/8	Chemical Kinetics, Course evaluations	14
	Final Exams	<b>Section 1 &amp; 80: Wed. May 17<sup>th</sup> (8-10am) MND 1005</b> <b>Section 14: Thurs. May 18<sup>th</sup> (3 -5 pm) MND 1005</b>	

This schedule is a general guideline. There may be times when we get behind or ahead. You should always be reading ahead before each lecture to maximize your retention of the material presented each day in class.

You may only take an exam or the final in another section with Dr. Mack's permission.

\*Chapter 13 is covered in the Colligative Properties Discussion in Lab week 11.

**DISCUSSION AND LAB SCHEDULE** (ALL DISCUSSION & LAB MATERIALS ARE FOUND ON THE CHEM. 1A SACCT WEBSITE)

Week	Date	Discussion (Mon/Tues)	Lab (Wed/Thurs)
1	1/23	Confirm rosters & add students	Safety lecture, Check in, practice quiz
2	1/30	Bring questions from the Math/Sig Fig & Nomenclature review sheets <sup>1</sup>	Experiment 1 ( <b>Quiz 1</b> )
3	2/6	Mass/Mole, % composition, stoichiometry & hydrate calculations ( <b>Quiz 2</b> )	Experiment 2 ( <b>Proficiency Quiz 1</b> )
4	2/13	Net Ionic Equations ( <b>Quiz 3</b> )	Experiment 3 ( <b>Proficiency Quiz 2</b> )
5	2/20	Dilutions, Solution Stoichiometry	Experiment 4 ( <b>Quiz 4</b> )
6	2/27	Gas Laws	Experiment 5 ( <b>Quiz 5</b> )
7	3/6	Heat, Work, "mCat" & Coffee Cup calorimetry	Experiment 6 ( <b>Quiz 6</b> )
8	3/13	Hess's Law Part 1 & 2	Experiment 7 ( <b>Quiz 7</b> )
9	3/27	The Bohr Atom, Quantum Numbers	Experiment 8 ( <b>Quiz 8</b> )
10	4/3	Electron Configurations	Experiment 9 ( <b>Quiz 10</b> )
11	4/10	Lewis Structures, VSEPR Shapes	Colligative Properties Lecture/Workshop <sup>2</sup> ( <b>Quiz 9</b> )
12	4/17	Valence Bond/Molecular Orbital Theory	Experiment 10 ( <b>Quiz 11</b> )
13	4/27	Intermolecular Forces	Exam 3 (in labs Wed/Thurs)
14	5/1	Chemical Kinetics	Experiment 11 ( <b>Quiz 12</b> )
15	5/8	Exp. 11 Calculations & graphs Instructor Evaluations	Lab Final, Check out, Instructor Evaluations

**\*All** experiments and discussion material must be downloaded & printed **PRIOR TO CLASS**. Your instructors **WILL NOT** have copies.

\*Most experiments have pre-laboratory assignments that must be completed prior to lab. Students without completed pre-lab assignments **WILL NOT** be allowed to participate in lab until it is completed.

**\*ALL STUDENTS** must bring a copy of the discussion material to each discussion section meeting. Failure to do so will result in point penalties.

\*Pre-lab assignments are due at the beginning of class. Labs are due the following week.

\*Please see the policies on due dates and Academic Honesty (CHEATING) presented in the syllabus.

<sup>1</sup> Download from SacCt prior to class

<sup>2</sup> Attendance is mandatory for all!

**LABORATORY POLICIES****I. SAFETY**

- a. Familiarize yourself with the location and use of all safety equipment and emergency exits in the laboratory.
- b. Eating and drinking are not allowed in the laboratory at any time.
- c. Visitors are not allowed in the laboratory; leave the room for the duration of the visit.
- d. **YOU MUST:**
  - Wear department approved safety goggles at all times when in lab. Shields are never allowed!
  - Wear shoes that completely cover your foot when in lab.
  - Wear long pants or a skirt to the ankle and a lab coat when in lab. (tights that fit close to the skin are not permissible)
  - Wear nitrile gloves when working with chemicals. They must be removed prior to leaving the lab. (The stockroom will not provide gloves to students.)
- e. Long hair presents a serious fire hazard in the laboratory and must be properly restrained to minimize this hazard.
- f. Working in laboratories outside of the regularly scheduled periods is strongly discouraged. When such work is necessary, the written permission of both instructors is REQUIRED.
- g. Students in lower division laboratories are not to work in the laboratory unless an instructor is immediately available (i.e. in the lab).
- h. Students in upper division laboratories are not to work in the laboratory unless an instructor is available in the vicinity (i.e. on the floor).
- i. Experiments using utilities such as gas, water, steam, heat, etc. are not to be left unattended. If it is necessary to use these utilities overnight, you must attach a card signed by your instructor to the apparatus and notify the Chemistry Service Center.
- j. Broken glassware must be placed in the "glass disposal boxes" provided.
- k. Unauthorized experimentation is prohibited!
- l. **NO CHEMICALS, SUPPLIES, OR EQUIPMENT ARE TO BE REMOVED FROM THE LABORATORY WITHOUT THE WRITTEN PERMISSION OF THE INSTRUCTOR AND THE SERVICE CENTER SUPERVISOR.**

**II. PREGNANCY**

- a. Women that are, or may become pregnant should carefully determine, upon consultation with your personal physician or the Student Health Service Center, if it is advisable for them to participate in the laboratory program.
- b. If you are pregnant or are planning to become pregnant, please inform your instructor.

**III. CHEMICALS**

- a. Treat all chemicals as if they were hazardous.
- b. It is the student's responsibility to know the hazards of the chemicals used in the lab. This information is located in the chemical's MSDS (material safety data sheet), which can be obtained from <http://rtk.complyplus.com/frame.asp>.
- c. Never put chemical waste down drains or in the trash receptacles. Use appropriately labeled waste containers.
- d. If a chemical waste container is almost full, immediately notify your instructor or the Service Center; **DO NOT OVERFLOW THE WASTE CONTAINER.**
- e. Never put anything (i.e. spatulas, pipets, fingers, etc.) into a reagent bottle. Place any unused reagents in the appropriate waste container; DO NOT return it to the bottle.
- f. Always return chemicals to their appropriate location.
- g. NEVER remove or borrow chemicals from another laboratory.

- h. If a required chemical is not available or needs to be refilled, notify your instructor.
- i. If chemicals are spilled, clean up the mess immediately. This especially includes spill on or around balances and other equipment. If you are unsure of how to clean up a spill, seek assistance from your instructor or the Service Center.

#### IV. EQUIPMENT

- a. DO NOT use any equipment until you have been properly instructed in its use.
- b. DO NOT move ANY piece of equipment without the permission of your instructor.
- c. DO NOT attempt to alter or repair any piece of equipment. If it is not in proper working order, inform your instructor.
- d. Clean all equipment immediately after you have finished using it, and if it was borrowed or checked out, return it immediately.
- e. Because of the limited number of certain items. Special equipment issued by the Service Centers must be returned the same day or a fine of \$5.00 will be assessed.

#### V. SERVICE CENTER

- a. The Chemistry Service Centers **WILL NOT** issue chemicals or equipment (other than those specifically listed for an experiment, student locker or instructional laboratory) without the consent of the instructor.
- b. The Service Center staff **WILL NOT** set-up labs after they have been taken down. The lab set-ups are available for one week after a lab is completed, so plan your time appropriately. It is best not to miss your regularly scheduled lab time.

#### VI. EMERGENCIES

- a. In the event of **ANY EMERGENCY**, notify your instructor, and the Service Center personnel immediately! DIAL 911 for emergencies, or 8-6851 to reach campus police on any campus phone. Emergency phones are located in the lobbies of each floor in Sequoia Hall.

**\*\*Failure to adhere to these laboratory safety policies will result in your removal from lab. The resulting missed lab can only be made up with instructor approval within the standard makeup time line.**

**TEN WAYS TO PASS YOUR NEXT CHEMISTRY EXAM**

1. Don't bother cramming. It won't work. Cramming puts things into your short term memory. If you're pressed for time and exhausted, it's even more short term. You should study throughout the week before the exam so that when the day to take the exam comes, you will feel confident of your preparation.
  2. Practice. You can't memorize a page of a German dictionary every day and expect to be able to speak the language next week. You have to use the vocabulary you've learned in context, or it will slip away almost as fast as you learn it. The same is true of chemistry. You must work as many problems from the text and notes as needed to assure proficiency.
  3. Read with your eyes closed. Study your notes and your textbook carefully. Then close your books and sit on them. Take out a sheet of paper and begin outlining the material you have been studying. You'll see quickly where further study is required. You must do the same thing in solving problems from the end of the readings. Do not look at worked examples as templates. Simply substituting numbers from your problem into the corresponding places the example sometimes gets you the right answer, but you won't know why. And when you are presented with a minor variation in the problem on a test, you won't be flexible enough to handle it. Also, never look for answers on line. That is the worst way to learn and it is nothing more than cheating.
  4. Get the big picture. Go over the lecture notes, handouts, problem sets, and laboratory work carefully and integrate all of these materials in your notes. Organizing the material will help you see connections and get the material into your long-term memory. However, don't spend too much time simply making your integrated notes look good - there's little satisfaction in being the neatest C student in the class.
  5. Get help! You're going to get stuck. There will be topics you just don't understand or problems you just can't solve. This is what office hours are for. Bring your work so that the instructors can see where things went awry. However, please don't wait until the day of the exam to get help as it will likely be too late for that.
  6. Give yourself a test. Take several problems from the chapters, write them out on a separate piece of paper and find out how long it takes you to work them. Do not use your book or notes, this will only hinder you in getting "exam ready".
  7. If you are pressed for time, you may have a hard decision to make. Should you concentrate first on those topics that you don't understand well at all, or on those areas where you have some understanding? Ideally, you'd be able to study both, but if you're out of time, you should study the areas where you have some understanding first. You must adopt this harsh philosophy because when standardized tests are used (as they are, in chemistry) you can expect to receive little partial credit.
  8. Focus on objectives. "Learning Objectives" on the course handouts and in the text chapters tell you exactly what concepts you're expected to learn and what skills you must master. Use those lists as a pre-exam checklist.
  9. Manage time. You must spend at least an hour or two every day studying chemistry. Get a daily planner and find a 1 —2 hr block where you can focus on chemistry. This doesn't include the actual time you spend in lecture and in laboratory, or even the time you spend writing laboratory reports or completing problem sets.
  10. Relax. You can do this. Allow you to believe that. Avoid negative and panicky classmates when choosing study partners. On the night before the exam, pack a couple of sharpened pencils and a working calculator for the next day, and go to bed early. Lack of sleep can magnify test anxiety. Give yourself plenty of time to get to the exam site. Get there early.
- A five-credit college level course takes a major bite out of your time. (If it doesn't, you're not getting your money's worth.) Careful planning and good time management skills are essential. Set up a regular study schedule (daily planner) and stick with it.