

Chemistry 100

Introduction to General Chemistry

Spring 2017

Instructor: Greg Elliott
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Lab Coordinator: Kathy McNamara-Schroeder
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Course time and location: 1:00-1:50 p.m., MWF, ENS 280

Lab rooms: CSL 522, 524, (5th floors Chemical Sciences Laboratory building)

Office hours (Help room): 10:00-11:00 am Mon.; GMCS 203
10:00 a.m.-12:00 p.m., Fri.; GMCS 203
Call or e-mail to make an appointment at another time

Textbook (required):

Immediate Access CHEM 100, Schedule All Sections. Required course materials for this class, Blei: Intro to General Chemistry ISBN 978-0738-08071-0 and Denniston: Connect Access Code for General Organic and Biochemistry ISBN 978-1259-14750-0 are provided in a 180 day subscription digital format by the first day of classes and are free through January 31st at 11:59PM. After January 31st, your SDSU student account will be charged a special reduced price of \$72.00 for access to the content (**see BB instructions for access**) for the remainder of the spring session unless you opt-out of the content by 11:59 PM on January 31st. To opt out visit: www.shopaztecs.com/optout . For more information visit: www.shopaztecs.com/immediateaccess .

Additionally, after the opt-out period ends and if you remain in the program, a reduced price print add-on will be available for \$25.50 if you prefer print. For those opting out, you will need to procure digital and/or print materials at regular pricing through the bookstore or elsewhere.

*If you prefer, you may purchase text and HW separately
(DO NOT PURCHASE IF USING OPT-IN)

Introduction to General Chemistry, 2nd Edition (2015)

I. Blei & G. Odian (Hayden-McNeil) ISBN 978-0738080710

*This is available through the SDSU Bookstore. Can be substituted with used copies of ISBN 978-0716770732 or ISBN 978-0716743750 (first ten chapters only).

Online homework card also available through Bookstore or online through

< <http://connect.mheducation.com/class/spring-2017-chem-100> >

HW access code is RPP3-3M2Z-KKRS-MR5S-KDVL

Lab manual (required): Chem 100 Lab Manual, Chemistry Dept.

Study aides (optional): Study Guide for General, Organic, and Biochemistry,
Second Edition (2006) M.L. Gillette & W. Gloffke

Blackboard web site: <http://blackboard.sdsu.edu>
1) Combined sections: This syllabus and other handouts
2) Lab sections: Grades, announcements from your TA

Crashers' web site: <http://www.chemistry.sdsu.edu/courses/CHEM100/>

Additional required items: Non-programmable calculator (e.g., TI-30Xa or Casio fx-300ms plus—required for Chem 200)
Matches or butane lighter for some lab exercises
Safety Glasses and apron (available at the Bookstore)
Gloves for some labs- molar volume of gas and titration experiments- strong acid or base will be used (available at drugstores such as CVS and Walgreens)

The course:

Prerequisites-A working ability with high school level algebra.

Attendance-Students are expected to attend all lectures only during your registered time.

Course enrollment-You must be enrolled in one laboratory section as well as lecture. If you do not attend the lab section in which you are enrolled, your spot will be given to another student and you will be dropped from the course.

Expected learning outcomes-Chemistry 100 is an introduction to general chemistry. By the end of this course a successful student will be able to:

- i) execute basic chemistry calculations such as unit conversions and stoichiometry;
- ii) explain the basic principles of atomic theory and chemical bonding;
- iii) quantitatively and qualitatively describe physical and chemical properties of matter;
- iv) illustrate the concept of dynamic equilibrium with acid-base chemistry;
- v) safely and confidently conduct protocols in a laboratory environment.

In order to be successful in this course, you will need to spend a considerable amount of time (estimated at approximately 12 hours per week) outside of class on reading, studying, and homework. Each chapter should be read prior to initial discussion in lecture. Rereading the text after lecture will help in understanding the material and reinforcing lecture topics. Homework problems are best completed as they are being presented and discussed in lecture. Do not put off study and homework assignments until the night before the exam or you will fail. Attendance at labs is a must, unless you are seriously ill.

Help Room-I highly recommend that you take advantage of the Chem 100 Help Room to ask questions that arise during your studies to your instructor or the teaching assistants. Any student may attend any of the Help Room hours of any teaching assistant (TA) and you may attend as many as you like. The weekly schedule for TA and instructor hours is posted on the door outside the Help Room (GMCS 203). It is also available for download on the Combined sections Blackboard site. Again, I urge you to take advantage of these free tutorials, discussions of lecture/lab material, and homework help.

Academic honesty-Don't cheat. You will need to learn the material in this course and, equally importantly, develop the problem solving skills required of this course to be prepared for upper division coursework and eventually a career. Anyone caught cheating will receive an appropriate points penalty (typically a zero for an assignment or exam) and will be referred to the university for disciplinary action.

Exams and grading-There will be three mid-term exams and one final exam given in class. The final is comprehensive and will be given on Fri. May 5, 2017 from 1:00 – 3:00 p.m. in ENS 280. Six quizzes will be given in lab. It is your responsibility to take exams and quizzes during their scheduled times. Please look carefully at the schedule and arrange your other activities now so as not to conflict with exams/quizzes. Share this schedule with friends and family members. Take good care of your health so that you are not sick on exam days.

Exam 1	150 points	Chapter 1,2,3
Exam 2	150 points	Chapter 4,5,6
Exam 3	150 points	Chapter 7,8,9
Final	200 points	Chapter 1-10
Quizzes	50 points	10 points/quiz (lowest dropped)
Lab	180 points	15 points/lab (lowest dropped)
Participation points (lab)	10 points	Assigned by TA
Homework	<u>50 points</u>	
	940 points total	

The following grades are guaranteed for the percentages shown. It is possible that the percentages may be lowered, but they will not be raised for a given letter grade.

A	90%	D	60%
B	80%	F	below 60%
C	70%		

Dropping the course-It is your responsibility to follow university policies regarding Cr/NC, drops, withdrawals, and incompletes. Your last opportunity to withdraw from the course without a grade appearing on your report card is Jan. 31 at 11:59 p.m.

Students with disabilities-At San Diego State we have an excellent Student Disability Services office (http://go.sdsu.edu/student_affairs/sds). If you are a student with a disability and believe you need special accommodations for this class, it is your responsibility to contact Student Disability Services at (619) 594-6473 for an appointment. Do this as soon as possible to avoid any delay in the receipt of your accommodations. Please note that testing accommodations on the basis of disability are not retroactive and cannot be provided by the instructor without the student first obtaining an accommodation letter from Student Disability Services.

Religious observances-Please notify me within the first two weeks of class of any planned absences from exams, quizzes, or labs due to religious observances so that we can arrange some reasonable accommodation.

Changes to the syllabus-This syllabus and schedule are subject to change in the event of extenuating circumstances. I will do my best to make these clear with announcements in class and on the Blackboard website. Please pay attention to announcements made in class and lab. It is your responsibility to check on announcements made in your absence.*Lab*-Chemistry is an experimental science. As such, its principles are best illustrated in the laboratory setting. As a student in this course, you will have the opportunity to learn many basic principles of chemistry in a modern, well-equipped laboratory environment. Learn the name of your laboratory teaching assistant (TA) and your lab section number. You will need to include this information on your lab assignments and exams.

All persons present in a chemistry laboratory must wear approved eye protection, apron or lab coat, long pants or long skirt, gloves as directed, and closed-toe shoes. Long hair must be confined securely. The eye protection must be worn by everybody whenever anyone in the room is working with chemicals. Anyone not in compliance will be asked to leave and will not be allowed to return until properly attired.

Lab work for Chem 100 must be performed in CSL 522/524 during the lab hours for which the student is registered. Because of logistical constraints, you will not be allowed to make up missed lab experiments; however, your lowest lab report and quiz scores *will be dropped* when determining your course grade. Use these free passes wisely.

Remember, **whenever any chemicals are in use anywhere in the room, everyone must wear appropriate goggles, lab coat or apron, and closed toed shoes.** If you have forgotten your goggles then you must either borrow a pair from a friend, buy new ones at the bookstore, or go home and take a zero on that lab. Any week that contains the word "Experiment" on the lab schedule indicates goggles and shoes will be required that day. Store a pair of shoes in your locker if you think you will forget to wear proper shoes. Lab reports are due at the end of the lab period unless specifically stated in schedule. **Late reports will receive no credit.** No credit will be given for a lab report if the work was not actually done by that student.

The lab report consists of the data pages and questions in the lab manual. Where computations are involved, numerical set-ups must be shown. The final answer must include units and the correct number of significant figures. Reports must be legible.

If you fail to check out of your locker at the end of the semester, there will be a fee of \$25. If you need to drop during the semester, you must check out of your locker before a drop is allowed.

There are 10 participation points available. These will be assigned at the discretion of the lab TA at the end of the semester. Arriving on time and prepared for laboratory will ensure that you receive these points.

Online homework-The purpose of online homework is to allow students the opportunity to work at their own rates on problems that illustrate principles on which they will be tested during exams. Immediate help in the form of guided solutions, practice, and question help is available to students when doing problems. Multiple attempts are allowed for each problem, but if you cannot solve the problem after more than a couple of tries then please bring it to the help room in GMCS 203 for TA help.

The homework grade will be determined by the number of problems completed correctly online through the McGraw-Hill Connect Chemistry module. The ten online assignments correspond to the ten chapters covered in the textbook. Due dates for each of the assignments will be announced on the Blackboard combined section as each is assigned. Approximately 650 total problems will be assigned during the semester, and these ~650 points will be scaled down to a total of 50 possible points that will be used in determining each student's final homework grade.

Each student must purchase their own Connect Chemistry access code from the SDSU bookstore. A video tutorial on how to enroll for and use the online homework platform is posted to the Blackboard Combined sections website.

Additional practice problems-One of the most common requests by students is more practice problems. The following problems from the "Exercises" section at the back of each chapter in your textbook are recommended to help with your mastery of the material prior to exams. It is recommended that you work on these in groups, identify concepts that are giving you trouble, and then bring your questions with you to office hours. Answer keys for practice problems from each chapter will be posted to the Combined sections Blackboard site periodically.

Ch. Additional practice problems

1. 1-14, 18-24, 26, 29, 31,33, 36, 38, 47-48, 54-56, 58, 60, 68
2. 1-4, 9-10, 12-15, 17, 19-28, 33-42, 52-58
3. 5-12, 15, 18, 19, 23-36, 42, 44, 46, 55, 57
4. 1, 4-19, 22, 25, 27, 31-35, 40-42, 47
5. 2, 8, 12-18, 21, 22, 25-30, 34, 36-38, 48, 49
6. 1-2, 6-7, 11-12, 15-17, 20-24, 33, 35, 37, 39-43, 45-46, 48, 52-54, 59
7. 2-4, 6, 10, 14-27, 29, 31, 34-36, 38, 49, 51-52, 55, 59-61
8. 1-5, 9-11, 14-20, 23, 26-28, 31, 33
9. 1-6, 8, 11-13, 15-21, 27, 28, 35, 36, 45, 51-54, 68, 72
10. 1-8, 15, 17, 18, 43, 44, 49, 50

Schedule of lectures and labs:

Date			Lecture Schedule	Weekly Lab Schedule
Jan.	Wed. Fri.	18 20	Introduction, Chapter 1 Chapter 1	Lab begins Jan 23 (2nd week)
Jan.	Mon. Wed. Fri.	23 25 27	Chapter 1 Chapter 1 Chapter 2	Introduction, Lab tour, Sig. Fig. and Scientific Notation worksheet (M-Th)
Jan. Feb.	Mon. Wed. Fri.	30 1 3	Chapter 2 Chapter 2 Chapter 2	Check-in, Experiment-Mass and density
Feb.	Mon. Wed. Fri.	6 8 10	Chapter 3 Chapter 3 Chapter 3	Quiz 1, Periodic table worksheet
Feb.	Mon. Wed. Fri.	13 15 17	Chapter 3 Chapter 3 Chapter 4	Quiz 2, Chemical nomenclature worksheet
Feb.	Mon. Wed. Fri.	20 22 24	Chapter 4 Review for exam 1 Exam 1 (Chapters 1-3)	VSEPR worksheet
Feb. Mar.	Mon. Wed. Fri.	27 1 3	Chapter 4 Chapter 4 Chapter 5	Experiment-Separation of an unknown mixture
Mar.	Mon. Wed. Fri.	6 8 10	Chapter 5 Chapter 5 Chapter 6	Quiz 3, Experiment-Heat capacity of a metal
Mar.	Mon. Wed. Fri.	13 15 17	Chapter 6 Chapter 6 Chapter 6	Quiz 4, Experiment- Determination of molar volume of gas and gas constant
Mar.	Mon. Wed. Fri.	20 22 24	Chapter 7 Chapter 7 Exam 2 (Chap 4-6)	Experiment-Metal carbonate
Mar.	Mon. Wed. Fri.	27 29 31	Spring Break	

Date	Lecture Schedule	Weekly Lab Schedule
Apr. Mon. 3 Wed. 5 Fri. 7	Chapter 7 Chapter 7 Chapter 7	Experiment-Empirical formula of magnesium oxide
Apr. Mon. 10 Wed. 12 Fri. 14	Chapter 8 Chapter 8 Chapter 8	Chemical reactions worksheet-Due at lab next week
Apr. Mon. 17 Wed. 19 Fri. 21	Chapter 9 Chapter 9 Chapter 9	Quiz 5, Experiment-Acid/base titrations-Part 1
Apr. Mon. 24 Wed. 26 Fri. 28	Chapter 9 Chapter 9 Exam 3 (chap. 7,8,9)	Quiz 6, Experiment-Acid/base titrations-Part 2
May Mon 2 Wed 3	Chapter 10 Chapter 10	Check out of lab
Final Exam: Fri. May 5 2017 1:00 - 3:00 pm	Final Exam is held in ENS 280	The Final Exam is cumulative (Chapters 1-10)

Please note- Exam 2 is the Friday before Spring break begins. Do NOT make flight arrangements that require you to leave before exam is complete. Allow sufficient time to get to the airport and through security lines.

For every exam- tell your exam times and days to anyone who might possibly purchase a ticket for you. Make sure they are aware of your need to be present for exams. We do not accept "someone else purchased a ticket for me" as an excuse.