

## CHEM 200 & 202 Syllabus — Summer 2019

### Contact Information:

**Email (for all needs):** chem200@sdsu.edu

### Instructor:

Professor: Theresa A. Carlson

Lecture (TBD): 12:00 pm — 1:50 pm Daily

Office: GMCS-213B

Phone: 619-594-5481

Office Hours (in GMCS-212): 10:30 am — 11:30 am (before exams) & 2:00pm — 3:00pm Tuesday

### Textbook:

*Openstax Chemistry Book:* <https://openstaxcollege.org/details/chemistry> (**FREE**)

Combined with: OWL Online Problem Sets & Lab Pre-Assignments: <http://www.cengage.com/owlv2/>  
The **Lab Manual** with integrated **Notebook** is available in the bookstore.

**Lab Equipment** will be available for purchase in the bookstore. They will have lab aprons/coats, safety glasses, gloves, and other useful lab equipment.

### Online Resources:

- **Blackboard:** will be used for obtaining the syllabus, course communications (e.g. exam locations), Turnitin assignments for **lab reports**, and grade dissemination.
- **Chem200 Website:** [sdsu.chem200.com](http://sdsu.chem200.com) will be used for distributing other course materials (e.g. lab handouts, lecture slides, sample practice exams, etc.)
- **OWL (Immediate Access Course):** will be used extensively for online homework, quizzes, and practice problems as well as Pre-Assignments for Lab Experiments. **Immediate Access Course:** Some or all of the required course materials for this class are provided in a digital format by the first day of classes and are free through the add/drop date. Your SDSU student account will then be charged a special reduced price for use of the materials for the remainder of the semester unless you opt-out of the content by 11:59 PM on the add/drop date. Please visit [www.shopaztecs.com/immediateaccess](http://www.shopaztecs.com/immediateaccess) for additional information about Immediate Access pricing, digital subscription duration, print add-ons, opting out and other frequently asked questions.

### ***USE CHROME!!!***

**Supplemental Instruction:** Supplemental Instruction (SI) Sessions will be offered for this course on every weekday, 8 times each week, throughout the semester. SI is free and open to all students enrolled in this course. Participation is completely voluntary and near-peer-led, and the instructor will not know who participates. SI Sessions are facilitated by an SI Leader who has recently successfully completed the course, and has been trained to lead active-learning-based group sessions where students can improve their understanding of course material, review and discuss important concepts, develop study strategies, and prepare for exams. Students who participate in SI Sessions typically earn higher final course and exam grades than students who do not participate, sometimes by a half to a full letter grade.

SI Program: [bit.ly/SIatSDSU](http://bit.ly/SIatSDSU)

Meet the SI Leaders: [its.sdsu.edu/chem-200/](http://its.sdsu.edu/chem-200/)

Session Calendar: [bit.ly/chem200sicalendar](http://bit.ly/chem200sicalendar)

***To get the most out of SI, attend early and often during the semester.***

## **General Student Learning Outcomes:**

Below is a summary of what students should be capable of upon the successful completion of this course.

- Perform calculations with the correct number of significant figures with a variety of SI units.
- Name and write a range of simple ionic and molecular formulas.
- Describe the structure of atoms and the various classes of compounds that they can form.
- Classify the different states of matter and describe each state at the molecular level.
- Use Avogadro's number and reaction stoichiometry to calculate the amounts of reactants and products involved in chemical reactions.
- Write and balance chemical reactions.
- Describe the major classes of chemical reactions at a molecular level and perform stoichiometric calculations related to these reactions.
- Describe, manipulate, and use the ideal gas law.
- Describe the kinetic-molecular theory of gasses and how it deviates from real gas behavior.
- Perform calculations on the exchange of heat in thermochemical processes.
- Calculate the enthalpy of chemical reactions.
- Describe and apply the quantum theory rules of atomic structure.
- Describe the electron configurations of many electron atoms.
- Use trends in atomic properties to compare different elements.
- Differentiate and describe the various models of chemical bonding.
- Compare and calculate bond energies.
- Draw and identify molecular structures based on the Lewis and VESPR models.
- Describe covalent bonding in terms of the valance bond and molecular orbital theories.
- Define the various changes of physical states for a substance and quantify the related enthalpy changes.
- Describe and differentiate the various forms of intermolecular forces.
- Describe and predict solubility in terms of intermolecular forces.
- Quantify the influence of solutes on the colligative properties of solutions.
- Quantify the enthalpy changes associated with dissolution of solutes.

<b>CHEM 200 Grade Scheme</b>					
<b>Item</b>	<b>Submission</b>	<b>Quantity</b>	<b>Value (each)</b>	<b>Total</b>	<b>Percentage</b>
<b>Review Assignments</b>	<b>Owl Lecture</b>	2	15	30	1.8%
<b>Lab Safety Quiz</b>	<b>Owl Lab</b>	1	15	15	0.9%
<b>Pre-Assignment Labs</b>	<b>Owl Lab</b>	9	10	90	5.5%
<b>Chapter Problem Set</b>	<b>Owl Lecture</b>	11	10	110	6.7%
<b>Quizzes</b>	<b>Owl Lecture</b>	4	20	80	4.9%
<b>Lab Reports</b>	<b>Blackbord</b>	Best 9 of 10	20	180	11.0%
<b>Lab Practical</b>	<b>Paper</b>	1	80	80	4.9%
<b>Lab Participation</b>	<b>Paper</b>	1	30	30	1.8%
<b>Discussion</b>	<b>Paper</b>	Best 6 of 7	20	120	7.3%
<b>Exams</b>	<b>Paper</b>	4	225	900	55.0%
			<b>Total</b>	<b>1635</b>	<b>100.0%</b>

## **OWL Assignments:**

Please note there are two OWL pages: OWL Lecture and OWL Labs, which separates the lecture and lab assignments. Before you begin there will be two Getting Started with OWL Assignments in the OWL Lecture, you **must** complete before you attempt any other assignments in the OWL program. **OWL assignments will be locked until the two Getting Started Assignments have been completed.** If you do not see the assignments click on Show All Assignments. Attempting to use OWL without understanding how the program works can lead to issues later on. Please take notes while you are doing these two assignments since the topics will be covered later.

◆ **General Chemistry Review (OWL Lecture)** is an assessment review on key chemistry concepts and essential skills to help you determine if you are ready for Chem 200. There will be 31 questions in the quiz that will assess your knowledge on chemistry concepts and essential skills in chemistry. If you receive a grade of 85% or lower you will need to complete the study plan and/or redo the review quiz **before you will be allowed to proceed to the next assignment, the problem sets will be locked.** If you receive a grade of 85% or higher you will need to just complete the study plan ONLY. You will have only **3 attempts available for the quiz.** *Note: If you attempt to redo the quiz please note your original score will be erased and will be unattainable.*

◆ **Math Review (OWL Lecture)** is to help refresh your memory and your knowledge on basic math skills and algebra skills you need in this course.

◆ **Lab Safety Quiz (OWL Labs)** The lab safety quiz must be completed with a grade of 60% or higher before you work in the laboratory. If you fail to achieve a 60% or higher on the online quiz, the lab coordinator will give you a paper quiz. Once you pass the paper lab safety quiz you will be allowed to attend lab. **Note: The paper quiz will not replace your original lab safety quiz grade.**

◆ **Quizzes (OWL Lecture)** are hard deadlines, extension will not be granted. You will need to have one hour to complete the online quiz. Do not wait until the last minute to complete the quiz; otherwise, you might not have the full amount of time to complete the quiz. **If the quiz crashes please read what to do on the SDSU Chem 200 website. Note: For the quiz always use Chrome and do not have any other open tabs; this can cause the quiz to crash.**

◆ **Lab Pre-Assignment (OWL Labs)** is to help you prepare yourself for the lab you will be doing. There will be calculations, safety questions, and topic questions to help you understand what you are doing in the lab. This assignment will be due before your lab period.

◆ **Chapter Problem Set policies:**

- There will be a chapter problem set from each of the 11 chapters covered in the text. Work on the problems several days before it's due so you have time to go to the help room and ask for more help. Never wait until the last day to work on the problem set; otherwise you will be rushing through the assignment and instead of learning how to break down problems and theories to better equip you for the exams.
- Full points can be obtained for each chapter's problem set by scoring above 85% on the problems for that chapter.
  - A score  $74\% = (74\% \div 85\%) \times 10 = 8.7$  points
- It is in your best interest to complete all the problem sets to ensure that you are fully prepared for the exams.
- The adjusted points will be calculated **throughout the semester. Please watch your email for important announcements regarding the uploads.** Errors occur due to incorrect RedID, multiple OWL accounts, and/or your work is in the wrong section.

**Note: I highly recommend you buy a composition book to work on the problem sets to keep good notes and to make your studying more efficient.**

## **Other Assignments:**

### ◆ **Lab Participation** points are allocated as follows:

- 2 notebook checks worth 10 points each
- 5 points for proper lab etiquette
- 5 points for coming to check-out

◆ **Exams** points will be deducted if you do not properly fill out the scantron. You need to make sure you bubble in your RedID correctly as well as your form letter. Failure to do so will result in a lower grade. 6.25 points will be deducted for each violation (the equivalent of one question).

◆ **Lab Reports** All lab reports, not the pre-labs, will need to be submitted to **Turnitin** for you to receive a grade for your lab report. Failure to send your lab report before your lab report is due will be an automatic zero. Lab reports that are plagiarized will be an automatic zero and will be reported. *Make sure you turn in the proper lab report into the correct Turnitin folder. Failure to do so will result in a point penalty at the discretion of the lab coordinator.*

◆ **Discussion** is an extra lecture session to go over concepts, calculations, and theory from the lectures. You will need to print the discussion worksheet (provided on the chem 200 website as well as on Blackboard) and try several of the problems by yourself or with a group before coming in. The experienced TA will help you with your questions and/or have you ask other students to help bring more of a discussion of concepts that are not being understood. Discussion is worth 15 points for participation and 5 points for a Discussion Wrap-Up, for a total of 20 points. The Discussion Wrap-Up is a couple of questions based on the topics of that week's discussion worksheet. **We will be trying out a program Chem101 for participation points and possibly the Wrap-Up.**

**Note:** Your individual grades for each course component will be posted on Blackboard. Your grades, that have been completed from OWL, will be posted the 3 days after your exam dates. You will have the weekend to check your grades and to email your instructor of any issues with your OWL grades, aka they are not showing up. Failure to do so will result in the grades being left as a zero. There will be two announcements on Blackboard to remind you to check your grades.

## **Grading:**

Your letter grade will be determined by your individual points total for the course. **There will be no curving of the course grades.** Below is a tentative grade range breakdown for each letter grade. The instructors reserve the right to universally modify this grade scale prior to assigning final letter grades.

Letter	Percentage	Letter	Percentage
<b>A</b>	> 90%	<b>C+</b>	68-72%
<b>A-</b>	85-90%	<b>C</b>	63-68%
<b>B+</b>	81-85%	<b>C-</b>	59-63%
<b>B</b>	76-81%	<b>D</b>	53-59%
<b>B-</b>	72-76%	<b>F</b>	<53%

### **Enrollment/Waitlist Policy:**

**Enrolled students.** *It is absolutely crucial that you attend the first three laboratory periods.* Failure to do so may result in your spot in the laboratory section being given to another student. Notify the laboratory coordinator (chem200@sdsu.edu before the first week of class) if you must miss a laboratory period in the first week of the semester for a legitimate reason. You must be able to attend the laboratory section of CHEM 200/202 for which you are enrolled; otherwise, you must drop the course and attempt to crash a different section that you can attend. If you decide to drop the course, inform the laboratory coordinator by email as soon as possible so your place can be given to a crasher.

**Waitlist.** If you are attempting to waitlist CHEM 200, you should attend every possible lab section, discussion, and lecture that will fit into your schedule. And keep track of which discussion and lab you attended. Go to [sdsuchem200.com](http://sdsuchem200.com) to find information regarding resources for you to not miss any assignments as a waitlister. Remember, you are 100% responsible for all assignments that are due and to keep up with the work. ***Waitlist students that get in should email: [chem200@sdsu.edu](mailto:chem200@sdsu.edu) with their name and RedID info ASAP.***

<b>Course Schedule</b>			
<b>Lecture #</b>	<b>Date</b>	<b>Text Chapter</b>	<b>Topics</b>
1	July 9, 2019	Chapter 1	Introduction & Essential Ideas
2	July 10, 2019	Chapter 2 & Chapter 3	Atoms, Molecules, and Ions Composition of Substances and Solutions
3	July 11, 2019	Chapter 3 & Chapter 4	Composition of Substances and Solutions Stoichiometry of Chemical Reactions
4	July 12, 2019	Chapter 4	Stoichiometry of Chemical Reactions
5	July 15, 2019	<b>Chapter 1 – 4</b>	<b>Review for Exam 1</b>
–	July 16, 2019	<b>Chapter 1 – 4</b>	<b>Exam 1</b>
6	July 17, 2019	Chapter 5	Thermochemistry
7	July 18, 2019	Chapter 5	Thermochemistry
8	July 19, 2019	Chapter 5	Thermochemistry
9	July 22, 2019	Chapter 5	Thermochemistry
10	July 23, 2019	Chapter 6	Electronic Structure and Periodic Properties of Elements
11	July 24, 2019	Chapter 6	Electronic Structure and Periodic Properties of Elements
12	July 25, 2019	Chapter 6 & Chapter 7.1 – 7.3	Electronic Structure and Periodic Properties of Elements Chemical Bonding and Molecular Geometry

Course Schedule			
Lecture #	Date	Text Chapter	Topics
13	July 26, 2019	Chapter 7.1 – 7.3	Chemical Bonding and Molecular Geometry
14	July 29, 2019	<b>Chapter 5 – 7.3</b>	<b>Review for Exam 2</b>
–	July 30, 2019	<b>Chapter 5 – 7.3</b>	<b>Exam 2</b>
15	July 31, 2019	Chapter 7.4 – 7.6	Chemical Bonding and Molecular Geometry
16	August 1, 2019	Chapter 7.4 – 7.6 & Chapter 8	Chemical Bonding and Molecular Geometry Advance Theories of Covalent Bonding
17	August 2, 2019	Chapter 8	Advance Theories of Covalent Bonding
18	August 5, 2019	Chapter 8	Advance Theories of Covalent Bonding
19	August 6, 2019	Chapter 9	Gases
20	August 7, 2019	Chapter 9	Gases
21	August 8, 2019	<b>Chapter 7.4 –9</b>	<b>Review for Exam 3</b>
–	August 9, 2019	<b>Chapter 7.4 –9</b>	<b>Exam 3</b>
22	August 12, 2019	Chapter 10	Liquids and Solutions
23	August 13, 2019	Chapter 10 & Chapter 11	Liquids and Solutions Solutions and Colloids
24	August 14, 2019	Chapter 11	Solutions and Colloids
25	August 15, 2019	<b>All Chapters</b>	<b>Review for Final</b>
–	August 16, 2019	<b>All Chapters</b>	<b>Final</b>

Exam Schedule	
	Date
<b>Exam 1</b>	Tue, Jul 16, 2019 12:00 PM
<b>Exam 2</b>	Tue, Jul 30, 2019 12:00 PM
<b>Exam 3</b>	Fri, Aug 9, 2019 12:00 PM
<b>Final Exam</b>	Fri, Aug 16, 2019 12:00 PM

**Pre-Lab & Lab Report Policy:**

Pre-lab assignments and your handwritten sample calculations must be turned in to your TA **no later than 5 minutes after** the official start of your lab period. Your TA has the right to refuse to grade any late pre-labs and sample calculations. **Remember:** The lab reports need to be turned into Turnitin before your lab period. Your TA will go over this in more detail during the first week of labs.

**Lab Attire:**

If a student is not wearing any of the following they will not be permitted into the lab:

- Lab apron (**yellow**) or lab coat (**blue**)
- Lab glasses (**no goggles**)
- Gloves (used for some experiments)
- Closed toed and closed heeled shoes
- Pants, skirts, and dresses must extend below the calf with no holes in the attire.
- No tank tops or open backs.

**\*Do not change into your proper lab clothes in the labs or in the CSL hallways, except for the lab apron or lab coat.**

Lab & Discussion Schedule	
Experiment/Activity	Date
Discussion	July 10, 2019
Lab Safety & Lab Notebook Worksheet & Check-In	July 11, 2019
Use of Volumetric Equipment Experiment	July 15, 2019
Discussion	July 17, 2019
Limiting Reagent of Solution Experiment	July 18, 2019
Standardization of an Aqueous NaOH Solution Experiment	July 22, 2019
Discussion	July 24, 2019
Molar Mass of Citric Acid Experiment (5B)	July 25, 2019
Calorimetry Part 1: Specific Heat Capacity Experiment	July 29, 2019
Discussion	July 31, 2019
Calorimetry Part 2: Enthalpy of Reaction Experiment & Heat Capacity Experiment (includes the extra experiment)	August 1, 2019
Atomic Emission Spectra Experiment & Qualitative Analysis Experiment (Note: Two labs will be done this week)	August 5, 2019
Discussion	August 7, 2019
Aluminum–Zinc Alloy Experiment Experiment & Check-Out	August 8, 2019
Lab Practical	August 12, 2019
Discussion	August 14, 2019
Discussion in Lab	August 15, 2019

**\*Students that miss checkout will be charged a \$25 fine.**

### **Online Assignment Policy:**

The deadlines for the online assignments, including pre-labs, homework, and quizzes are hard deadlines and extensions will not be granted. All assignments will be scheduled with sufficient time to allow you to complete the assignment in advance of the "last minute". *Consequently, you are solely responsible for any failures to complete the assignment by the scheduled time.* Problems such as lack of internet service, OWL site problems, or dogs eating WiFi antennas will not be acceptable reasons for not completing the assignments. *You are encouraged to complete the assignments well before the deadlines to avoid potential technological obstacles.*

In the case of an extended system-wide failure the instructors will be notified by the site operator and steps will be taken to accommodate any problems that arise.

For all technical difficulties or errors that arise with the **OWL** systems **please contact the OWL technical support staff directly and by phoned email.** The instructors and TAs will be unable to help you resolve anything but the most basic (is it plugged in?) technical problems.

### **Attendance Policy:**

#### Excused absences:

Excused absences will only be awarded in the case of a legitimate reasons (illness, scheduled academic/athletic events, court appearances, etc.) as determined by the instructor. ***Note: If you miss one lab and/or discussion the lab and/or discussion will be the dropped assignment. If you have an excused absence that extends beyond one week please email the lab coordinator ASAP.***

#### For lectures:

Regular attendance in the lectures is strongly recommended. If you do have to miss class, you should obtain class notes from another student.

#### For labs and discussion:

Attendance in **all** laboratory meetings and discussion is **REQUIRED**. All lab and discussion work, during the semester, must be done in the scheduled period. If you are late by 10 minutes, for your discussion period, the discussion TA will deduct 5 points from your discussion participation grade; after 30 minutes you will no longer receive participation credit for the discussion period. **Under no circumstances will students be allowed to make up lab experiments and/or discussions.**

#### For exams:

**Attendance for all exams is required, including the lab practical exam.**

#### **Test accommodations:**

If you are a student with a disability and believe you will need accommodations for this class, it is your responsibility to contact Student Ability Success Center at (619) 594-6473. To avoid any delay in the receipt of your accommodations, you should contact Student Ability Success Center as soon as possible. Please note that accommodations are not retroactive, and that I cannot provide accommodations based upon disability until I have received an accommodation letter from Student Ability Success Center. Your cooperation is appreciated.

**Note:** All students receiving test accommodations through the Student Ability Success Center's Test Accommodation Center (TAC) enrolled in this class for Spring 2019 will be participating in a test booking pilot program called Clockwork. This will involve students and instructors using an online module for communicating with the TAC instead of the paper forms currently in use for scheduling any quizzes or exams for this class.



Student's feedback will be invaluable as the TAC optimizes the new system for the official roll-out. Opportunities for informing the TAC about your experience will happen several times throughout the semester.

To book a testing appointment or to get more information on how to use this new system please visit <https://sascportal.sdsu.edu/ClockWork/custom/misc/home.aspx>. Questions about the pilot program or TAC operations should be directed to the TAC office (ph: 619-594-2643, email: [tac.sasc@sdsu.edu](mailto:tac.sasc@sdsu.edu) or in person, M-F: Calpulli 1300)

### **Policy on Cheating/Plagiarism:**

There is a zero tolerance policy regarding plagiarism in this course. Any instances of cheating or plagiarism identified by the TA, lab coordinator, or the instructors, will result in a meeting between the instructor and student(s) following which the instance and documentation of plagiarism will be reported to the Academic Senate as well as the student ***receiving a grade of F for the course***. It is your responsibility to know what constitutes cheating and plagiarism.

**It should be noted that turning in a lab report for a lab that you have not performed, or the results of a lab that you had completed in a prior semester, both constitute cheating and plagiarism and will be reported - *all students must perform their own analyses in the labs.***

### **Am I Ready For CHEM 200:**

ASSUME THIS CLASS WILL REQUIRE A MINIMUM OF 15 HOURS OF YOUR TIME PER WEEK TO COMPLETE!

The prerequisites for CHEM 200 are one year of high school chemistry, two years of algebra, and a passing score on the Placement Test, or a passing grade (a C or higher) in Chem 100. Chemistry 200 is a demanding, 5-unit course which requires an enormous amount of time and your commitment to work hard! (Please do NOT take this course unless you are prepared to commit the necessary time and hard work.) It is advisable that you make Chemistry 200 the focus of your semester and that you do NOT overburden yourself with an unmanageable course load while taking this course. YOUR success is our success. and we want you to succeed in this course. YOUR success requires a large time commitment and hard work - please do NOT take this course unless you are willing to allow sufficient time to study, attend ALL lectures, and attend ALL labs with preparation in advance. Writing good laboratory reports also requires a lot of time and preparation prior to lab. You will enjoy your semester in Chemistry 200 - and you will benefit in the sciences so much more from all that you learn - if you allow yourself the time necessary to work hard and succeed! PLEASE ALLOW ADEQUATE TIME IF YOU TAKE THIS COURSE!