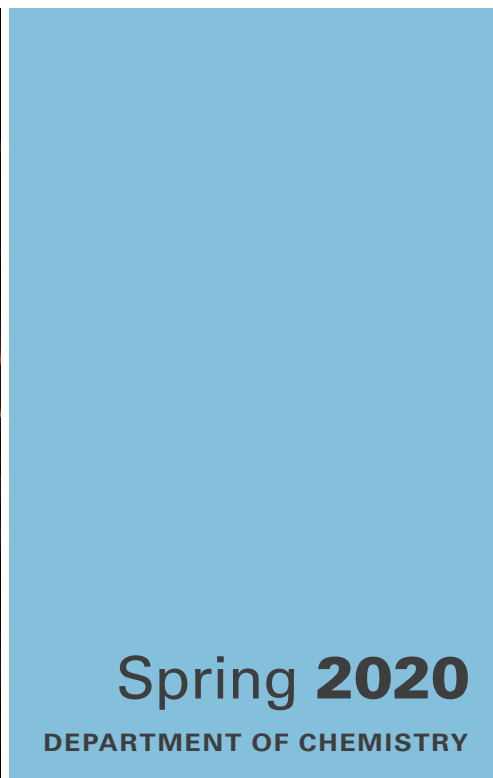




UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

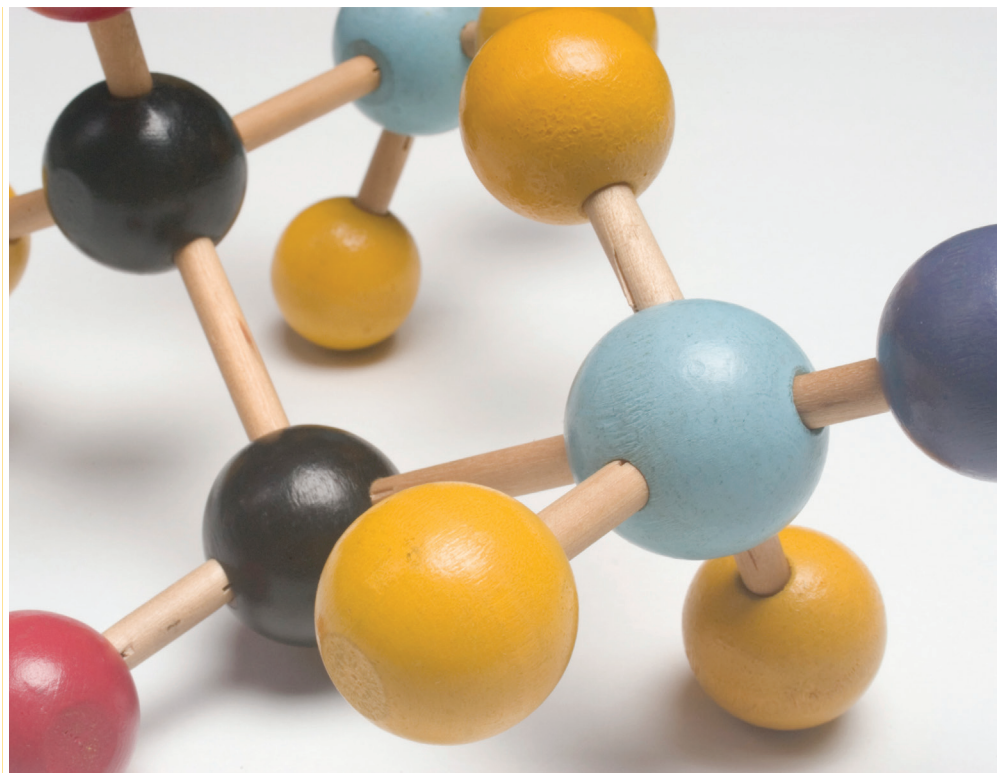


Spring 2020

DEPARTMENT OF CHEMISTRY

CHEMISTRY 101

.....
SYLLABUS AND LAB BOOK



CHEMISTRY 101

Syllabus and Lab Book

Spring **2020**

Also includes:

Course Information

Course Schedules

Department of General Chemistry
University of Illinois

PUBLISHED BY

Stipes Publishing Company
202–204 West University Avenue
Champaign, Illinois 61820

Published by Stipes Publishing Company
202–204 West University Avenue, Champaign, IL 61820

Gretchen M. Adams, Donald J. DeCoste, and Elise M. McCarren, Copyright ©2020

ISBN: 978-1-64617-006-7

All rights reserved. No parts of this book may be produced, in any form or by any means,
without permission in writing from the Authors.

Contents

INTRODUCTION TO CHEMISTRY 101

Active Learning	3
Chemistry 101 Course Policies	5
Preface.	21

LAB ACTIVITIES/EXPERIMENTS

WORKSHOP 1: Compounds, Elements, and Mixtures	25
ACTIVITY 1: The Mole and Empirical Formula	33
ACTIVITY 2: Explorations with Gases	37
Review Questions for Exam 1	41
WORKSHOP 2: Chemical Reactions	47
ACTIVITY 3: Nuts & Bolts and Stoichiometry, Part 2	53
ACTIVITY 4: Precipitation Reactions	59
ACTIVITY 5: Limiting Reactants	61
Review Questions for Exam 2	65
WORKSHOP 3: Heat, Energy, and Atomic Structure	71
ACTIVITY 6: Modern Atomic Theory.	77
ACTIVITY 7: Making Models of Molecules.	81
WORKSHOP 4: Models of Molecules Part 2	87
Review Questions for Exam 3.	93
Periodic Table.	99

Introduction to Chemistry 101

.....

Active Learning

Learning chemistry is not a passive event in which you simply absorb facts given by the teacher like a sponge absorbs water. Learning chemistry requires you to take an active role. In fact, in a very real sense you must construct your own version of chemistry and store it away in a form that is meaningful to you.

We are here to help you in every way we can, but ultimately you bear the responsibility for learning chemistry and making it your own. To do this you must go beyond simple memorization of facts to a real understanding of the concepts of chemistry. We want you to learn to “think like a chemist”—to understand the concepts of chemistry in a way that enables you to solve problems because you understand and can apply the fundamental ideas, not because you have memorized a particular solution. This is a lofty goal—it is not easy to achieve this kind of understanding. So how do you do it? You do it by

1. listening to (not just hearing) the overview of the concepts discussed in lecture
2. reading the appropriate sections of the textbook and lecture notes (several times)
3. struggling with homework and online problems
4. having discussions with your peers and your teachers
5. studying to *learn* instead of studying just to get an “A”
6. recognizing what you do not understand and implementing a plan to achieve greater understanding



The purpose of **lecture** is not to give a detailed account of a particular topic. Rather the lecturer will give an overview of a topic, showing how a particular topic fits in with previously learned material and why the concept is important. Typically a lecturer will not go over detailed solutions to particular problems but will talk in general terms about how to think through the problems associated with that topic. The lecturer “paints with a broad brush.” Even though there are a lot of other students in lecture with you, you will still be required to take an active role.

The **textbook** is a source of detailed information about a particular concept and about the problems associated with that concept. Understanding the material in the textbook requires repeated readings and thorough study. The text is dense with ideas that require slow, careful consideration. You should read the text before coming to lecture and practice the example problems located in each section.

The **homework** in this course requires you to provide the overall strategy for solving the problems. This will show whether you understand the concepts well enough to think your way through an entire problem with no or minimal hints along the way. Your goal is to master solving each problem with no help by the time you take your exam. If you cannot do this, you are not ready and have not mastered the concepts.

The **discussion** section provides an opportunity for you to interact with other students and the teaching assistant. **This is not a session in which the TA does the homework while you listen.** In fact you should have your homework completed **before** you go to class. You will be expected to assume an active role in your discussion section and collaborate with other students.

The **lab** section provides an opportunity for you to apply some of the chemistry concepts you are learning in lecture and from the text. Through your lab write-ups you have a chance to demonstrate your understanding of chemistry by providing thorough, detailed explanations and answers to lab questions. Your lab TA is there to monitor safety in the lab and help you to fine tune points. **It is not the lab TA's job to provide you with explanations or answers to lab questions that are part of your write-up.** Many of the lab days are actually discussion days, allowing you to interact with others in the class to come to a better understanding of the concepts covered in lecture and in your reading. The TA will be there to facilitate your group discussions, not giving you answers as much as helping you and those in your group ask the right questions as you proceed.

In summary, to learn chemistry effectively requires that you must take an active role. You must take responsibility for participating in the activities described above. We are anxious to help you but we cannot do it for you. We believe in you, now believe in yourself and go for it!

Chemistry 101 Course Policies

CHEMISTRY 101A

Instructor Elise McCarren

Office 2026 Chemistry Annex (CA)

E-mail emccarr2@illinois.edu

Office hours Tues. and Thurs. 12–1 P.M.,
Wed. 1:30–3:00 P.M., and by appointment

Website address www.chem.illinois.edu

COURSE INFORMATION

Times:

CHEMISTRY 101A

Lecture Tuesday and Thursday:
AL1: 11:00–11:50 A.M., 100 NL

Lab Monday

Discussion Friday

Required Materials:

Textbook: *Introductory Chemistry*, 9th Ed., S. S. Zumdahl and D. J. DeCoste

Options:

- Cengage Unlimited (Best option if you are also taking statistics or calculus)
<https://www.cengage.com/unlimited>
- Bookstore looseleaf package
- Online rental

**Note:* You do NOT need to use the access code for OWL Online Homework that comes along with the printed or online textbook. We will not be using OWL this semester.

I-clicker: Any model or generation. This is available from the bookstore.

Lab manual: *Chemistry 101 Syllabus and Lab Book*, Spring 2020

Calculator: A simple calculator that performs scientific notation. Using a graphing calculator (e.g. TI-84) is acceptable as well. NOTE: Ti Nspire is not allowed.

Lab notebook: Any notebook, or college-ruled theme paper.

Grading:

	<u>Points Possible</u>	<u>Percent of Grade</u>
Hour exams (3)	450	45%
Final exam	300	30%
Lab write-ups	150	15%
Electronic homework	60	6%
Post-Exam Workshops	10	1%
Clicker questions	10	1%
Stoichiometry Workshop	10	1%
TA Evaluation	10	1%
	<hr/> 1,000	<hr/> 100%

Exam Dates:

There will be three regular exams during the semester. These will be given from 7:00 P.M. to 8:30 P.M. on:

Tuesday, February 18	(Chapters 1, 2, 3.1–3.5, 4, 5, 8, 13.1–13.9)
Tuesday, March 31	(Chapters 6, 7.1–7.4, 9.1–9.5, 13.10, 15.1–15.2, 15.4–15.7)
Thursday, May 30	(Chapters 10.1–10.3, 11, 12, 14.1, 14.3–14.4)

Conflicts for exams must be arranged ahead of time. A signup sheet will be provided a week before each exam.

Note: Practice exams will be available electronically to help you prepare.

Final Exam:

101A: Friday, May 8
7:00–10:00 P.M.

The final exam will be cumulative. There is no scheduled conflict for the Final Exam. **Do not** make plans to leave campus before the Chemistry 101 final.

COURSE DETAILS**Lectures:**

101A: Lectures meet each Tuesday and Thursday from 11:00–11:50 A.M. in 100 Noyes Lab.

The purpose of the lecture is to present and discuss main concepts and ideas. The emphasis is on how to think about chemistry. Active participation (asking/answering questions and talking to your peers) is required, especially through the use of your i-Clicker.

Creating a Positive Learning Environment for All:

<http://www.cookcountycourt.org/HOME/CellPhoneElectronicDeviceBan.aspx>

Due to the large number of students in lecture and the nature of the stadium-style seating in the lecture hall, it is very easy to get distracted in this environment. Therefore, it is very important to respect your classmates and create a positive learning atmosphere for all. One of the best ways to do this is to ban the use of **all** laptops, tablets, and cell phones during lecture. The personal time with the instructor and each other is very valuable since we only meet twice a week and material moves fast. Research shows that students in these lecture environments learn more effectively and perform better on exams when these devices are not used. Most importantly, they distract others around you. Thus, when attending lecture, keep these points in mind:

- Before lecture begins, put your cell phones and/or tablets in “airplane” mode and close your laptop.
- As instructors, we understand that you have good reasons for wanting to use these devices. We know that this is hard for you but feel it is critical to the learning process. Remember, we are here to help you.
- Have your notebook, writing utensil, i-Clicker, and learning attitude ready to go!

Discussions:

Discussion sections meet each Friday. This is the time to ask questions of a teaching assistant and to be asked conceptually challenging problems. Active participation is required.

Laboratory:

Labs meet each Monday. Always bring your textbook, lab manual and calculator to lab. You will perform the experiment or activity and complete as much of the lab write-up as you can before leaving the lab. If you decide to leave the lab early, you must turn in your lab write-up (anything not completed will be given a score of zero). ***Lab write-ups are due during the first five minutes of your Friday discussion section.*** The exceptions are the Review Questions before each exam. These are due online by the specified due date. We also encourage you to turn lab write-ups in early! Furthermore, you will often perform your lab experiments with at least one other person. While this collaboration is important and helpful, you will submit your own lab write-up and write it in your own words. The only way to assess what you learned as an individual is to grade your own work! Turning in identical lab write-ups (even portions of it) is considered cheating. We will follow the university code regarding any Academic Integrity violation: <http://studentcode.illinois.edu>

You must be present in lab to receive credit for the lab write-up. Late lab write-ups will not be accepted due to the number of students in the course and to be fair and consistent with everyone.

Office Hours:

101A: Office hours are Tues. and Thurs. 12–1 P.M., and Wed. 1:30–3:00 P.M. You can also make appointments to meet with me by sending me an e-mail.

TAs will have at least 2 hours of office hours each week in the Chemistry Learning Center. Your TA will discuss these with you in class in both lab and discussion.

Regrade Policy:

Regrades on any lab write-ups must be submitted within *one week* of receiving the graded lab. Regrades on exams must be submitted by the *end of that class period* in which the exam is returned.

Learning Center (2021 Chemistry Annex):

General chemistry TAs will usually be available for assistance in the Learning Center from 9 A.M. to 5 P.M. Monday–Friday during the weeks classes are in session. Additional texts, study aids, and computers are available.

The hours of operation for the Learning Center are:

Monday–Thursday	8:30 A.M.–9:00 P.M.
Friday	8:30 A.M.–5:00 P.M.
Saturday	CLOSED
Sunday	3:00 P.M.–9:00 P.M.

(These hours are subject to change. Always check www.chem.illinois.edu for the most current hours.)

Students with Disabilities:

To ensure that disability-related concerns are properly addressed from the beginning, students with disabilities who require assistance to participate in this class are asked to see the instructor as soon as possible.

Academic Integrity:

Academic dishonesty includes, but is not limited to, cheating, plagiarizing, fabrication of information or citations, facilitating acts of dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students. Certain assignments may be submitted through software, which can check for plagiarism. By enrolling in this course, you are indicating implicitly to the instructor that you have read, understand and accept the university's policies and procedures regarding academic integrity and dishonesty (<http://studentcode.illinois.edu>).

CAMPUS SERVICES

The University of Illinois provides multiple services to new and continuing students for ensuring their success. The following services, though not an exhaustive list, might help.

- Health Services:
 - McKinley Health Center: <http://www.mckinley.illinois.edu/mhc.html>
 - Counseling Center: <http://counselingcenter.illinois.edu/counseling/services>
 - Wellness Center: <http://www.campusrec.illinois.edu/wellnesscenter/>
 - Disability Resources and Educational Services: <http://www.disability.illinois.edu/>
- Academic Services:
 - Access and Achievement Program: <http://www.las.illinois.edu/students/accessandachievement/>
 - Writers Workshop @ Center for Writing Studies: <http://www.cws.illinois.edu/workshop/appointments/>
 - Career Center: <https://www.careercenter.illinois.edu/>
 - OMSA Tutoring and Instructional Services: <http://www.omsa.illinois.edu/academics/tutoring.html>
 - LAS Honors: <http://www.las.illinois.edu/students/honors/>
 - Illinois Leadership Center: <http://www.illinoisleadership.illinois.edu/>
- Diversity and Inclusion Services:
 - Office of Inclusion and Intercultural Relations: <http://oiir.illinois.edu/>
 - Women's Resource Center: <http://oiir.illinois.edu/womens-center>
 - Office of Minority Student Affairs: <http://www.omsa.illinois.edu/>
 - LGBT Resource Center: <http://oiir.illinois.edu/lgbt-resource-center>
- Crisis Services:
 - Emergency Dean: <http://www.odos.illinois.edu/emergency/index.asp>
 - Student Assistance Center/Dean on Duty: <http://www.odos.illinois.edu/studentAssistance/index.asp>
 - Office for Student Conflict Resolution: <http://www.conflictresolution.illinois.edu/>
- Financial Services:
 - Office of Student Financial Aid Scholarships: <http://www.osfa.illinois.edu/aid/scholarships/index.html>
 - Office of Student Financial Aid Loans: <http://www.osfa.illinois.edu/aid/loans/index.html>
 - Office of Student Financial Aid International: <http://www.osfa.illinois.edu/aid/international/index.html>
 - Illinois Promise: <http://www.osfa.illinois.edu/aid/promise.html>
- Miscellaneous Services:
 - University of Illinois Tenant Union: <http://www.tenantunion.illinois.edu/>
 - Student Legal Services: <http://www.odos.illinois.edu/sls/geninfo/index.html>
 - Veterans Student Support Services: <http://veterans.illinois.edu/>
 - Campus and Community Student Services: <http://www.odos.illinois.edu/ccss/>
 - Cultural Centers: Asian American Cultural Center, African American Cultural Center, La Casa Cultural Latina, Native American House

LABORATORY SCHEDULE

	Meets On:	Lab Write-Up or Online Assignment Due:
Introduction and Check-In	January 24	—
Workshop 1: Introduction	January 27	January 27, in class
Activity 1: Empirical & Molecular Formula	February 3	February 7
Activity 2: Explorations with Gases	February 10	February 14
<i>Review Questions for Exam 1 Part 1</i>	February 14	February 14, 10:00 pm in Lon-Capa
<i>Review Questions for Exam 1 Part 2</i>	February 17	February 17, 10:00 pm in Lon-Capa
Workshop 2: Chemical Reactions	February 24	Completion credit, due in class February 24
Activity 3: Nuts and Bolts Stoichiometry	March 2	March 6
Activity 4: Precipitation Reactions	March 9	March 13
Activity 5: Limiting Reactants	March 23	March 27
<i>Review Questions for Exam 2 Part 1</i>	March 27	March 27, 10:00 pm in Lon-Capa
<i>Review Questions for Exam 2 Part 2</i>	March 30	March 30, 10:00 pm in Lon-Capa
Workshop 3: Heat and Energy	April 6	Completion credit, due in class April 6
Activity 6: Modern Atomic Theory	April 13	April 17
Activity 7: Making Models of Molecules	April 20	April 24
Workshop 4: Models of Molecules Part 2	April 24	Completion credit, due at the beginning of class April 27
<i>Review Questions for Exam 3</i>	April 27	April 29, 10:00 pm in Lon-Capa
Final Lab Day (Exam 3 Returned)	May 4	—

ELECTRONIC HOMEWORK SCHEDULE (LON-CAPA)

Generally speaking, you will have two types of electronic homework due throughout the semester.

Homework will usually be due on Wednesdays, and you will have an unlimited number of attempts to complete these problems.

Prelecture and post-lecture exercises will encourage you to do your textbook reading and become familiar with the problems associated in each section before each lecture as well as be sure you have mastered the main points afterwards. This will provide a more valuable learning experience for you during and after the actual lecture time. You will have a limited number of attempts to complete each of these problems. (Due dates will correspond with the lecture days.)

MASTER DUE DATE SCHEDULE FOR ASSIGNMENTS: SPRING 2020

	Week	Monday	Tuesday	Wednesday	Thursday	Friday
January	1	20 Martin Luther King Junior Day	21	22	23 Pre-lecture Assignment 2 8:00 AM	24 Textbook Problems Assignment 1 (Due in Discussion Section)
	2	27 Workshop 1 – Compounds, Elements, and Mixtures	28 Post-Lecture 2/ Pre-lecture 3 Assignment 8:00 AM	29 LonCapa HW 1 10:00 PM	30 Post-Lecture 3/ Pre-lecture 4 Assignment 8:00 AM	31 Textbook Problems Assignment 2
February	3	3	4 Post-Lecture 4/ Pre-lecture 5 Assignment 8:00 AM	5 LonCapa HW 2 10:00 PM	6 Post-Lecture 5/ Pre-lecture 6 Assignment 8:00 AM	7 Textbook Problems Assignment 3 Activity 1: Mole and Empirical Formula Lab Write-Up
	4	10	11 Post-Lecture 6/ Pre-lecture 7 Assignment 8:00 AM	12 LonCapa HW 3 10:00 PM	13 Post-Lecture 7/ Pre-lecture 8 Assignment 8:00 AM	14 Textbook Problems Assignment 4 Activity 2: Gases Lab Write Up Review Questions for Exam 1 Part 1 10:00 PM
	5	17 Review Questions for Exam 1 Part 2 10:00 PM	18 Exam 1 7:00 PM	19	20 Pre-lecture 10 Assignment 8:00 AM	21

(continued)

	Week	Monday	Tuesday	Wednesday	Thursday	Friday
February	6	24 Workshop 2 – Chemical Reactions	25 Post-Lecture 10/ Pre-lecture 11 Assignment 8:00 AM	26	27 Post-Lecture 11/ Pre-lecture 12 Assignment 8:00 AM	28 Textbook Problems Assignment 5
		March	7	2	3 Post-Lecture 12/ Pre-lecture 13 Assignment 8:00 AM	4
8	9			10 Post-Lecture 14/ Pre-lecture 15 Assignment 8:00 AM	11 LonCapa HW 4 10:00 PM	12 Post-Lecture 15/ Pre-lecture 16 Assignment 8:00 AM
	9		16 Spring Break	17 Spring Break	18 Spring Break	19 Spring Break
10	23		24 Post-Lecture 16/ Pre-lecture 17 Assignment 8:00 AM	25 LonCapa HW 5 10:00 PM	26 Post-Lecture 17/ Pre-lecture 18 Assignment 8:00 AM	27 Textbook Problems Assignment 8 Activity 5: Limiting Reactants Write-Up
		Stoichiometry Workshop (completed & due in lecture)				Review Questions for Exam 2 Part 1 10:00 PM

(continued)

	Week	Monday	Tuesday	Wednesday	Thursday	Friday
March/ April	11	30 Review Questions for Exam 2 Part 2 10:00 PM	31 Exam 2 7:00 PM	1	2 Pre-lecture 20 Assignment 8:00 AM	3
		6 Workshop 3 – Heat & Energy	7 Post-Lecture 20/ Pre-lecture 21 Assignment 8:00 AM	8	9 Post-Lecture 21/ Pre-lecture 22 Assignment 8:00 AM	10 Textbook Problems Assignment 9
April/May	13	13	14 Post-Lecture 22/ Pre-lecture 23 Assignment 8:00 AM	15 LonCapa HW 6 10:00 PM	16 Post-Lecture 23/ Pre-lecture 24 Assignment 8:00 AM	17 Textbook Problems Assignment 10 Activity 6: Modern Atomic Theory Lab Write-Up
		20	21 Post-Lecture 24/ Pre-lecture 25 Assignment 8:00 AM	22 LonCapa HW 7 10:00 PM	23 Post-Lecture 25/ Pre-lecture 26 Assignment 8:00 AM	24 Textbook Problems Assignment 11 Activity 7: Making Models of Molecules Lab Write-Up
	15	27 Workshop 4 – Models of Molecules	28 Post-Lecture 26/ Pre-lecture 27 Assignment 8:00 AM	29 LonCapa HW 8 Type 1 10:00 PM	30 Exam 3 7:00 PM	1
				Review Questions Exam 3 10:00 PM		

(continued)

	Week	Monday	Tuesday	Wednesday	Thursday	Friday
May	16	4	5 Pre-lecture 29 Assignment 8:00 AM	6	7 Reading Day	8 7-10 PM Chem 101 Final Exam

Legend:**Textbook Problems Assignment – *Introductory Chemistry* textbook homework****LonCapa – LON-CAPA electronic homework****Lab Write-Ups and Activities – Due on Compass at 8:00 am**

CHEMISTRY 101 DETAILED WEEKLY TEXTBOOK HOMEWORK & READING SCHEDULE*

*Refer to textbook homework assignment and pre-lecture assignment for corresponding chapters to read.

Week 1	Week of January 20–23	Textbook Homework Assignment 1	Basic Skills Review (Videos Available on Course Website)
Monday Lab	MLK Jr. Day		
Tuesday Lecture	Course Intro (Chapter 2.6, 2.8)	(All are from Questions and Problems section.) Chapter 2: 89, 93, 102	Dimensional Analysis Density Optional: Significant Figures
Wednesday	No Class		
Thursday Lecture	States of Matter, Naming (Chapter 3.3 & 3.4 Chapter 4.8 & 4.10 Chapter 5.2, 5.3, 5.5)	Chapter 3: 15, 24, 31, 49 Chapter 5: 20–22, 42–46, 60	Elements, Molecules, Compounds, Mixtures Naming Ionic Compounds Naming Compounds Containing Nonmetals Naming Practice & Review
Friday Discussion	Course Intro and Orientation	*This week's textbook homework due in discussion.	

*We expect certain topics from this Tuesday & Thursday's textbook homework to be familiar to you from high school chemistry—these will not be discussed in detail in lecture. These topics are:

- Chemical and physical changes (Textbook section 3.2)
- Dimensional analysis (Section 2.6)
- Density (Section 2.7)

If these are *not* review for you, please take time to read the textbook and to review the supplemental course lecture videos, if necessary. *You can still be successful in this class.*

Week 2	Week of January 28–31	Textbook Homework Assignment 2	Basic Skills Videos
Monday Lab	Workshop 1 – Naming, Compounds, Elements, Mixtures		
Tuesday Lecture	Introduction to the Mole (Chapter 8.2–8.5)	Chapter 4: 39, 42, 73, 78, 83 Chapter 8: Please complete parts a & b only for the following problems: 21, 29, 30, 31, 40, 41, 91 Also complete problem 114.	Protons, neutrons, electrons* Finding molar mass Grams to moles Moles to grams Counting Particles
Wednesday	Electronic Homework Assignment 1 Due		
Thursday Lecture	Empirical & Molecular Formula (Chapter 8.6–8.9)	Percent Composition: Chapter 8: 47 a & b only, 50 a & b only Empirical Formula: Chapter 8: 55, 56, 57, 59, 73 Molecular Formula: Chapter 8: 77, 81	Empirical & Molecular Formula Percent Composition
Friday Discussion	Week 2 Practice	*This week's textbook homework due in discussion.	

*We will not cover determining the number of protons, neutrons, and electrons in an atom or ion during lecture. If this is *not* review for you, please review section 4.7 and 4.10 of your textbook and/or watch the corresponding video.

Week 3	Week of February 3–7	Textbook Homework Assignment 3	Basic Skills Videos
Monday Lab	Activity 1 – Aluminum Foil & Percent Mass		
Tuesday Lecture	Introduction to Gas Laws (Chapter 13.1, 13.8, 13.9)	Chapter 13: 78, 82	Explaining Gas Law Phenomena Kinetic Molecular Theory
Wednesday	Electronic Homework Assignment 2 Due		
Thursday Lecture	Quantitative Gas Laws (Chapter 13.3, 13.5, 13.7)	Chapter 13: 17, 31, 49, 51, 64	Deriving Relationships Using the Ideal Gas Law Ideal Gas Law
Friday Discussion	Week 3 Practice	*This week's textbook homework due in discussion.	

Week 4	Week of February 10–14	Textbook Homework Assignment 4	Basic Skills Videos
Monday Lab	Activity 2 – Explorations with Gases		
Tuesday Lecture	Dalton's Law of Partial Pressures (Chapter 13.6)	Chapter 13: 67, 71, 72	Dalton's Law of Partial Pressures
Wednesday	Electronic Homework Assignment 3 Due		
Thursday Lecture	Gas Law Applied Problems	Chapter 13: 105, 106, 128, 138, 145, 151	Problems that Combine Phenomena
Friday Discussion	Week 4 Practice	*This week's textbook homework due in discussion.	

Week 5	Week of February 17–21		Basic Skills Videos
Monday Lab	Exam 1 Review Questions	No textbook homework due this Friday!	Don't miss Exam 1!
Tuesday Lecture	Exam 1 Review		
Wednesday			
Thursday Lecture	Chemical Reactions (Chapter 6.1–6.2, 7.1)		
Friday Discussion	Exam 1 Passed Back Go over exam 1!		
			Balancing Equations Writing Equations in Formulas from Words

Week 6	Week of February 24–28	Textbook Homework Assignment 5	Basic Skills Videos
Monday Lab	Workshop 1 – Chemical Reactions		
Tuesday Lecture	Limiting Reactant 1 (Chapter 9.1–9.4)	Chapter 9: Please complete parts a & b only of the following problems: 5, 14, 16, 24 Also complete 29 & 35.	Mole-Mole and Mole-Mass Relationships Finding the Limiting Reactant Finding the Amount of Excess Reactant Leftover
Wednesday			
Thursday Lecture	Limiting Reactant 2 (Chapter 9.5)	Chapter 9: 45, 48 a & b, 90	
Friday Discussion	Limiting Reactant Practice	*This week's textbook homework due in discussion.	

Week 7	Week of March 2–6	Textbook Homework Assignment 6	Basic Skills Videos
Monday Lab	Activity 3 – Nuts and Bolts		
Tuesday Lecture	Precipitation Reactions (Chapter 7.1–7.2)	Chapter 6: 6, 13, 16, 18, 24, 40 a–e, 48, 52, 73 d–h, 76 Chapter 7: 11, 15, 18, 22,	Solubility Precipitation Reactions
Wednesday			
Thursday Lecture	Precipitation Reactions Part 2 (Chapter 7.3–7.4)	Chapter 7: 26, 40, 75	Molecular, Complete, and Net Ionic Equations
Friday Discussion	Precipitation Reactions Practice	*This week's textbook homework due in discussion.	

Week 8	Week of March 9–13	Textbook Homework Assignment 7	Basic Skills Videos
Monday Lab	Activity 4 – Precipitation Reactions		
Tuesday Lecture	Molarity (Chapter 15.2, 15.4, 15.5)	Chapter 15: 34, 35, 37, 49, 55, 59, 61	Solution Problems
Wednesday	Electronic Homework Assignment 4 Due		
Thursday Lecture	Concentration of Ions Problems (Chapter 15.6–15.7)	Chapter 15: 64, 65, 67, 70, 91	Ions in Solution Problems
Friday Discussion	Concentration of Ions Practice	*This week's textbook homework due in discussion.	

Week 9 – Spring Break! No assignments!

Week 10	Week of March 23–27	Textbook Homework Assignment 8	Basic Skills Videos
Monday Lab	Activity 5 – Limiting Reactants Virtual Lab		
Tuesday Lecture	Gas Stoichiometry (Chapter 13.1)	Chapter 13: 85, 87, 89	Gas Stoichiometry Problems
Wednesday	Electronic Homework Assignment 5 Due		
Thursday Lecture	Stoichiometry Workshop	None	
Friday Discussion	Stoichiometry Practice/Exam Review	*This week's textbook homework due in discussion.	

Week 11	Week of March 30–April 3		Basic Skills Videos
Monday Lab	Exam 2 Review Questions	No textbook homework due this Friday!	Don't miss Exam 2!
Tuesday Lecture	Exam 2		
Wednesday			
Thursday Lecture	Heat & Energy (Chapter 10.3)		Endothermic and Exothermic Processes
Friday	Exams 2 Passed Back, Go over Exam 2		Energy Diagrams

Week 12	Week of April 6–10	Textbook Homework Assignment 9	Basic Skills Videos
Monday Lab	Workshop 2 – Heat and Energy		
Tuesday Lecture	Atomic Theory, Electron Configuration (Chapter 11.6–11.10)	Chapter 10: 8, 11, 13, 14, 65 Chapter 11: 9, 16, 24, 26, 29, 47, 50, 51, 56, 61, 63, 95, 98	Atomic Structure History Orbitals Electron Configuration
Wednesday			
Thursday Lecture	Bonding and Periodic Trends (Chapter 11.1, 12.1–12.3)	Chapter 11: 73, 74 Chapter 12: 1, 7, 8, 11, 13, 19, 25, 33, 38, 43, 44, 48	Bonding Periodic Trends
Friday Discussion	Electron Configuration Practice, Trends Practice	*This week's textbook homework due in discussion.	

Week 13	Week of April 13–17	Textbook Homework Assignment 10	Basic Skills Videos
Monday Lab	Activity 6 – Atomic Theory		
Tuesday Lecture	Introduction to Molecular Structure (Ch. 12.4–12.7)	Chapter 12: 57, 59, 64, 65, 68	Lewis Structures
Wednesday	Electronic Homework Assignment 6 Due		
Thursday Lecture	Introduction to Shape & Polarity (Ch. 12.8–12.10)	Chapter 12: 78, 81, 86, 110, 116, 119	Shape & Polarity 1
Friday	Lewis Structures Practice	*This week's textbook homework due in discussion.	

Week 14	Week of April 20–24	Textbook Homework Assignment 11	Basic Skills Videos
Monday	Activity 7 – Models of Molecules 1		
Tuesday	Exceptions to the Octet Rule, Shape & Polarity (Chapter 12.7)	Start Workshop 3 Part 1 in Lab Manual	Lewis Structures Exceptions to the Octet Rule
Wednesday	Electronic Homework Assignment 7 Due		
Thursday	Shape & Polarity 2, Introduction to Intermolecular Forces (Chapter 14.1–14.4)	Start Textbook Homework Assignment 12	Shape & Polarity 2: Expanded Octets Intermolecular Forces
Friday	Finish Workshop 3 Parts 1 & 2	Workshop 3 Due Monday in Lab	

Week 15	Week of April 27–May 1	Textbook Homework Assignment 12 (Suggested)	Basic Skills Videos
Monday	Exam 3 Review Questions	*Have your TA check Workshop 3 Parts 1 & 2.	
Tuesday	Intermolecular Forces (Chapter 14.1–14.4)	(Suggested) Chapter 14: 8, 10, 21, 25, 27, 74, 75, 76, 77, 80	Intermolecular Forces
Wednesday	Electronic Homework Assignment 8 Due, Exam 3 Review Questions Due	No textbook homework due this week!	
Thursday	Exam 3		
Friday	No class		

Week 16	Week of May 4–8	Assignments
Monday	Exam 3 Passed Back, Go over Exam 3	No other assignments this week! Good luck on the final!
Tuesday	Review Lecture	
Wednesday		
Thursday	Reading Day	
Friday	Chem 101 Final Exam 7:00 PM	