

INTRODUCTORY GENERAL CHEMISTRY

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Office Hours: M: 9:50am~10:50am (at MESA); 11:00am~11:55am

T: 10:30am~11:40am

Th: 11:00am~12:00pm

OVERVIEW

Welcome to CHEMISTRY 42, Introductory General Chemistry!

Why is chemistry so important? Well, I want you to think about that throughout the Fall 17 semester. For now, let me just mention that many believe chemistry has moved to center stage in fields ranging from medicine to environment, from agriculture to advanced communication. You may not agree with this statement. However, the fact that most things around us (i.e. nature and manufacturing) deal with matter guarantees that chemistry will remain vital to our everyday life (you'll learn in week one why this is the case). Now, more than ever, having a fundamental understanding of chemistry is critical.

This course, Introductory General Chemistry – Chemistry 42, is a basic introduction chemistry course for students who are preparing for either one year of general chemistry (Chem 1AB or Chem 4AB) or for Chem 8, one semester organic chemistry course. Topics that we will be exploring in the course include:

- fundamental principles of the composition of matter
- physical and chemical changes
- atomic and molecular structure
- chemical equilibrium and kinetics
- intermolecular forces
- solution
- basic stoichiometry
- acids and bases
- laboratory theory and techniques.

I truly hope that you find this course stimulating and rewarding!

STUDENT LEARNING OUTCOMES (as stated in the official Course Outline of Record of SRJC.)

https://portal.santarosa.edu/SRWeb/SR_CourseOutlines.aspx?Semester=20183&CVID=36485

Upon completion of this course, a student will be able to:

1. Analyze basic quantitative problems in chemistry, and apply them to real life situations.
2. Correlate macroscopic properties of matter with its structure and behavior at the atomic scale.
3. Communicate effectively using common chemical conventions and notation.
4. Evaluate available information to plan, perform and interpret basic laboratory experiments.

GENERAL COURSE POLICIES

I. Prerequisites:

Course completion of MATH 154 or 155, or two years of high school algebra or equivalent.

II. Lecture and Lab time:

Lecture: MW 12:00 pm ~ 1:30 pm Bech 1910
Lab: W 9:00 am ~ 12:00 pm Bech 1960

III. Required Course Materials:

- Textbook: Russo, S and Silver, M. E. *Introductory Chemistry: Atoms First 5th Ed.* Pearson Education
ISBN: 9780321925568 (E-book with Mastering Chemistry)
ISBN: 9780321926951 (Digital + Print with Mastering Chemistry)
- Chemistry 42 Lab Manual
- Laboratory Notebook (any bound composition notebook)

IV. Attendance:

Attendance is **important** and **expected** of all students. Attendance and attention are vital for your learning. Please do not miss or be consistently late to the class. Excessive absences will result in a significant reduction in your course grade, and may lead to the student being dropped from the course completely. **THERE WILL BE NO MAKE-UPS ON LABS OR EXAMS FOR ANY REASON OTHER THAN A DOCUMENTED MEDICAL EXCUSE.**

Missing more than two labs will result in an "F" for the entire course, regardless of the student's performance in the class.

V. Standards of Conduct:

All students are expected to do their own work. This does not preclude collaboration and group study, but it does mean that anything put to paper and turned in is expected to come from that student. Cheating, or anything that can be construed as cheating will result in no credit given, if not worse.

No inter-student communication is allowed during exams; any comments or questions are to be directed toward the instructor. Laboratory experiments will often be done in pairs, but each student is expected to record his or her own data. It is not acceptable for one partner to take notes and the other partner to copy everything at the end of the lab.

VI. Reading Assignments:

Lectures are designed to help you understand the material presented in the textbook. To get most out of the lecture, one should **ALWAYS** read the appropriate sections before they are discussed in class.

VII. Homework Assignments:

Homework is an important vehicle for study; **working out the problems is one of the most effective ways to learn and study chemistry**. On occasion, the assigned problem may be the source of an exam question.

VIII. Laboratory:

TO RECEIVE A PASSING GRADE IN THE COURSE, PASSING WORK MUST BE DONE IN BOTH THE LAB AND LECTURE PORTIONS OF THE CLASS.

Laboratory exercises are an integral part of the course. They are designed to provide you with a hands-on way to experience the chemical concepts discussed in the lecture

- Before lab, read the experiment and do all the pre-lab questions.
- Arrive on time, properly dressed.
- Follow all lab safety regulations discussed.
- Turn in your lab reports. **Late labs will be marked down by 20% of the value of the lab reports.**
- **Please do not miss labs.** It is hard to schedule a make-up lab in this course.

Attendance at laboratory sessions is mandatory. **PLEASE DO NOT MISS LABS.** No incomplete grades (I) will be given for missing labs. **In order to pass the course, no more than TWO (2) missing lab are allowed.**

You are expected to keep a Lab Notebook. The Lab Notebook is an extremely important part of any laboratory experience, since it is the permanent record of what was done and what was observed. Thus, I will be checking your Lab Notebook periodically throughout the semester; you will be graded on the quality of maintenance of your Lab Notebook.

IX. Exams:

There will be 4 exams and a final exam (cumulative) in the course. **NO MAKE-UP EXAMS WILL BE GIVEN IN THIS COURSE.** An excused absence from an exam will be granted only if proper documentation is provided.

X. Accommodations for Students with Disabilities:

If you need disability-related accommodations for the class, please provide the authorization letter from the Disability Resources Department to me as soon as possible. Also, please come see me during the office hour as soon as possible to discuss about the accommodations.

XI. Re-Evaluation of Graded Work:

Graded work may be submitted for re-evaluation within one class period from when it was received. In comparing ones graded materials with that of fellow students, any difference must be confirmed by submission of both students' work for consideration. The document in question must be submitted with written detailed rationale for any changes requested. Based on this rationale, the entire assignment will be thoroughly evaluated. This re-evaluation can result in positive, negative, or no change to the original score.

XII. Emergency Evacuation Plan:

In the event of an emergency during class that requires evacuation of the building, please leave the class or the lab immediately, but calmly. We will meet in the open area between Bech Hall, Shuhaw Hall and Baker Hall to make sure everyone exited the building safely and to receive further instructions.

Copies of the red Emergency Preparedness Handbook are posted throughout the building and have more detailed information and procedures for most imaginable emergency situations. Any types of emergency can/should be reported to the district police dispatcher at (707) 527-1000.

XIII. Grading:

The weighing factors for the various types of assignments and percentage cutoffs are listed below:

Factors	Weights (%)
Exams/Quizzes	46%
Homework Assignments	4%
Lab Work / Lab Notebook	26%
Final	24%

Final course letter grades will correspond to the following percentages:

≥ 88% **A** ≥ 75% **B** ≥ 64% **C** ≥ 50% **D** Below 49% **F**

XIV. Important Dates:

Jan 21 st , 2018	Last day to register/add without instructor's signature or add code
Jan 28 th , 2018	Last day to drop semester length class (eligible for a refund)
Feb 4 th , 2018	Last day to register/add with the instructor's signature or add Code
Feb 4 th , 2018	Last day to drop a class without "W" symbol
FEB 15 th , 2018	Mandatory Professional Development Activity Institutional Day (No classes)
Feb 16 th , 2018	Lincoln's Day Holiday
Feb 19 th , 2018	Washington's Day Holiday
Feb 25 th , 2018	Last day to opt for P/NP
Mar 19~25, 2018	Spring Break
April 22 nd , 2017	Last day to drop a class with "W" symbol
May 19~25, 2018	Final Examinations

EXAM Dates:

Feb 12 th , 2018	Exam #1
March 12 th , 2018	Exam #2
April 16 th , 2018	Exam #3
May 9 th , 2018	Exam #4

FINAL EXAM Dates:

May 23rd, 2018 (Wed) 10:00AM ~ 12:45PM

The Final Exam will be cumulative.

TENTATIVE LECTURE SCHEDULE

<u>Week Beginning (Mon):</u>	<u>Topic</u>	<u>Chapter</u>
Jan 15	Introduction/ What is Chemistry? Matter (properties)	Chapter 1
Jan 22	Matter (properties) Measurements Uncertainty/Significant Figures/ Precision and Accuracy/ Unit Conversions/	Chapter 1 Chapter 2
Jan 29	Precision and Accuracy/Unit Conversions Dimensional Analysis	Chapter 2
Feb 5	Development of Atomic Theories/ What does an atom look like?	Chapter 3
Feb 12	EXAM #1 Feb 12th (Mon) Electrons/Electron Configuration	Chapter 3/4
Feb 19	Ionic Compounds/Molecular compounds/ Bonds/Ions Lewis Structures Naming Chemical Compounds	Chapter 4/5
Feb 26	Lewis Structure/ Molecular Geometry Polarity of Molecules	Chapter 5 Chapter 6
Mar 5	Phases of Matter/ Intermolecular Forces Intro to Chemical Reactions	Chapter 7 Chapter 8
Mar 12	EXAM #2 March 12th (Mon) Chemical Reactions	Chapters 8/13
Mar 19	SPRING BREAK	
Mar 26	Intro to Electrochemistry	Chapter 10
Apr 2	Stoichiometry	Chapter 9
Apr 9	Gases	Chapter 11

Apr 16	EXAM #3 April 16th (Mon) Solutions	Chapter 12
Apr 23	Solutions (contd)	Chapter 12
Apr 30	Intro to Equilibrium Acids-Bases	Chapter 14 Chapter 15
May 7	Acids-Bases EXAM #4 May 9th (Wed)	Chapter 15
May 14	Nuclear Chemistry	Chapter 16

FINAL EXAM May 23rd, 2018 10am~12:45pm
CUMULATIVE

Tentative Lab Schedule

<u>Week #</u>	<u>Date</u>	<u>Lab Topic</u>
1	Jan 17	No Lab
2	Jan 24	Lab intro/safety/locker check-in
3	Jan 31	Dimensional analysis
4	Feb 7	measurements
5	Feb 14	Separation of a Ternary Mixture
6	Feb 21	tba
7	Feb 28	Atoms and the electromagnetic spectrum
8	Mar 7	Ionic and molecular compounds
9	Mar 14	Lewis Structures
10	Mar 21	Spring break
11	Mar 28	Chemical Reactions
12	Apr 4	Electrochemistry and the Activity Series
13	Apr 11	Synthesis of Indigo
14	Apr 18	Gas Laws
15	Apr 25	Preparation and Concentration of a Solution (week 1)
16	May 2	Preparation and Concentration of a Solution (week 2)
17	May 9	Acetic Acid Titration
18	May 16	Locker Check-out