

INTRODUCTORY GENERAL CHEMISTRY

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Office Hours:

Mon: 10:00AM – 11:00AM (** at MESA); 11:30AM – 1:30PM

Tue: 9:30AM – 10:30AM

Wed: 12:00PM – 1:00PM

OVERVIEW

Welcome to CHEMISTRY 42, Introductory General Chemistry!

Why is chemistry so important? Well, I want you to think about that throughout the Spring 17 semester, as you are taking this course. 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 do not have to 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 am passionate about chemistry and I really look forward to learning with all of you. 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=20173&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 155 or two years of high school algebra or equivalent.

II. Lecture and Lab time:

Section 7280: Lecture: Bech Hall 1901, Tue and Thurs 1:30PM – 3:00PM
Laboratory: Bech Hall 1948, Tue 3:00PM – 6:00PM

Section 7948: Lecture: Bech Hall 1901, Tue and Thurs 10:30AM – 12:00PM
Laboratory: Bech Hall 1948, Thurs 3:00PM – 6:00PM

III. Required Course Materials:

- Textbook: *ACS Chemistry in Context 8th Ed.* ISBN: 9780073535463(E-book w/ access code)/ 9781259681271 (loose-leaf w/ access code)
- Chemistry 42 Lab Manual – S17 (ISBN: 2818120148766)
- Standard Laboratory 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:

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.

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

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, 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	46%
Quizzes (on-line)	5%
Homework Assignments	4%
Labs/Lab Exam	24%
Final	21%

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 22 nd , 2017	Last day to register/add w/o instructor's signature/add code
Jan 29 th , 2017	Last day to drop semester length class (eligible for refund)
Feb 5 th , 2017	Last day to register/add WITH instructor's signature/add code
Feb 5 th , 2017	Last day to drop a class without "W" symbol
Feb 16 th , 2017	Mandatory PDA Institutional Day (No classes)
Feb 17 th , 2017	Lincoln's Day Holiday
Feb 20 th , 2017	Washington's Day Holiday
Mar 20~26, 2017	SPREING BREAK
Apr 23 rd , 2017	Last day to drop a class with "W" symbol

EXAM Dates:

Feb 14 th , 2017	Exam #1
March 16 th , 2017	Exam #2
April 18 th , 2017	Exam #3
May 11 th , 2017	Exam #4

FINAL EXAM Dates:

Section 7280: May 25th, 2017 1 pm – 3:45 pm

Section 7948: May 23rd, 2017 10 am – 12:45 pm

The Final Exam will be cumulative.

TENTATIVE LECTURE SCHEDULE

<u>Week Beginning (Mon):</u>	<u>Topic</u>	<u>Chapter</u>
Jan 16	Introduction/ Matter (properties) SI/metric system units	Chapter 1
Jan 23	Uncertainty/Significant Figures/ Unit Conversions/ Elements and Compounds	Chapter 1
Jan 30	Periodic Table Nomenclature of Binary Compounds	Chapter 1
Feb 6	Atomic Structure Development of Atomic Theories	Chapter 2
Feb 13	EXAM #1 Feb 14th (TUE)	
Feb 20	Electron Configuration/ Lewis Dot Structures/Covalent Bonding Intro to Ionic Compounds	Chapter 2
Feb 27	Lewis Structure/ Molecular Geometry	Chapter 3
Mar 6	Intro to Electromagnetic Radiation/ UV and Infrared Radiations Intro to Stoichiometry	Chapter 3
Mar 13	More Stoichiometry EXAM #2 March 16th (Thu)	Chapter 3
Mar 20	SPRING BREAK	
Mar 27	Solutions/Intermolecular Forces Concentration	Chapter 5
Apr 3	Concentration	Chapter 5
Apr 10	Energy	Chapter 4

Apr 17	EXAM #3 Apr 18th (Tue) Gases	Handout
Apr 24	Gases Acids-Bases	Chapter 6
May 1	Intro to Equilibrium Oxidation-Reduction Reactions	Chapter 8
May 8	Redox Reaction/Electrochemistry EXAM #4 May 11th (Thu)	Chapter 8
May 15	Nuclear Chemistry	Chapter 7

FINAL EXAM:

Section 7280: May 25th, 2017 1 pm – 3:45 pm

Section 7948: May 23rd, 2017 10 am – 12:45 pm

The Final Exam will be cumulative.

Tentative Lab Schedule

<u>Week #</u>	<u>Date</u>	<u>Lab Topic</u>
1	Jan 17 th /Jan 19 th	NO LAB
2	Jan 24 th /Jan 26 th	Lab info, Lab Safety, keeping lab notebook
3	Jan 31 st /Feb 2 nd	Expt 1: Measurements
4	Feb 7 th /Feb 9 th	Expt 2: Separation of Mixture (part 1)
5	Feb 14 th (Tue) Feb 16 th (Thu)	Expt 2: Separation of Mixture (part 2) NO LAB (campus closed)
6	Feb 21 st (Tue) Feb 23 rd (Thu)	NO LAB Expt 2: Separation of Mixture (part 2)
7	Feb 28 th /Mar 2 nd	Expt 2: Separation of Mixture (part 3)
8	Mar 7 th /Mar 9 th	Expt 3: Ionic vs Molecular Compounds
9	Mar 14 th /Mar 16 th	Expt 4: Making an NaCl solution
10	Mar 21 st /Mar 23 rd	SPRING BREAK
11	Mar 28 th /Mar 29 th	Expt 5: Concentration using Hydrometer
12	Apr 4 th /Apr 6 th	tba
13	Apr 11 th /Apr 13 th	Expt 6: Concentration by Evaporation
14	Apr 18 th /Apr 20 th	Expt 7: How Much Energy is in Food?
15	Apr 25 th /Apr 27 th	Expt 8: Chemical Reactions
16	May 2 nd /May 4 th	Expt 8: Chemical Reactions (part 2)
17	May 9 th /May 11 th	Expt 9: Electricity from a Chemical Rxn
18	May 16 th /May 18 th	LAB EXAM