

## **Chemistry 42**

## **Introduction to General Chemistry**

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**Spring 2017**

**Section 6919**

**Instructor: Dr. Jamie Kulp**

Santa Rosa Junior College

Lecture: Bech Hall 1999, Sat 9:00am–12:00p

Laboratory: Bech Hall 1980 Sat 12:00am–3:00pm

Office Hours 3-4pm Room 1960 and by appointment via email/video chat

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### **Required Materials:**

**Online Link:** <http://bookstore.santarosa.edu/santarosa/CourseMaterials.aspx?src=2>

1. **Text:** Introductory Chemistry, Tro, 5<sup>th</sup> Edition Pearson; ISBN, 9780134026886
2. **Laboratory Manual:** *Chemistry 42 Laboratory Manual* ISBN 2818120146144
3. **Laboratory Notebook:** You will need a notebook with duplicate pages, such as carbonless copies.
4. **Safety Goggles:** Purchased from SRJC bookstore, online or hardware store.
5. **Scientific Calculator**

### **Course Information**

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Welcome to chemistry 42. This will serve as an introduction to chemistry for students with very limited to zero exposure to chemistry. This course is designed for students who are preparing for either one year of general chemistry (Chem 1AB or Chem 4AB) or for Chem8, one semester organic chemistry course. Chemistry is the central science in our world today with applications ranging from medicine and biology to engineering, biotechnology, nanotechnology, materials and nearly every field of modern technology and science as well as more! Chemistry is the study of matter and its changes and our world is made up of matter so nearly every thing in our world can be appreciated uniquely through the perspective chemistry provides. The tools you will develop in this course such as problem solving strategies, critical thinking and quantitative methodology will build a foundation for you to build further scientific knowledge upon.

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

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. Understand macroscopic properties of matter with the underlying atomic structure.
3. Communicate intelligently using common chemical language and notation.
4. Utilize data sets and background information to plan, perform and interpret basic laboratory experiments.

## **GENERAL COURSE POLICIES**

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**Prerequisites:** Course completion of MATH 155 or two years of high school algebra or equivalent.

**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 three labs will result in an "F" for the entire course, regardless of the student's performance in the class.**

**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.

**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.

**Homework Assignments:** Homework is one of the most important aspects of this course in terms of your personal input and involvement in the course. You will not learn chemistry without putting in the time to work on problems and go through the process yourself. So try to spend time working on the assigned problems each week. Your hard work and dedication will show. Homework is not graded but is instead for you to practice and work out on your own over the semester. I will often work out problems in class as examples, so if you have questions you desire to have reviewed in lecture please ask me or email prior to the lecture.

**Laboratory:** Laboratory is your chance to do chemistry! Here you will explore in person the ideas and concepts learned in lecture. The experiments performed in lab will help to give you hands-on exposure to chemistry and help you to see that chemistry is not an abstract science, but instead a real physical experience that can be very exciting and help us understand our world in a way no other method of learning can provide. Before lab, read the experiment and do all the pre-lab questions. You will not get the most out of lab if you come unprepared. You are also required to do the following:

1. Arrive on time, properly dressed.

2. Follow all lab safety regulations discussed.
3. Turn in your lab reports. Late labs will be marked down by 20% of the value of the lab reports.
4. 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 will be given for missing labs. In order to pass the course, no more than three (3) missing lab reports 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.

**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.

**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.

**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.

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

**Grading:** Your course grade will be determined by the following items:

1. Exams 40%
2. Quizzes 10%
3. Lab Assignments/Performance 30%
4. Final 20%

Final course letter grades will correspond to the following percentages:  $\geq 88\%$  **A**  $\geq 75\%$  **B**  $\geq 64\%$  **C**  $\geq 50\%$  **D** Below 49% **F**

## Exam Dates

1. Feb 18th, 2017 Exam #1
2. Mar 18th, 2017 Exam #2
3. Apr 15th, 2017 Exam #3
4. May 13th, 2017 Exam #4
5. FINAL EXAM May 20<sup>th</sup>, 2017 9am-12pm.

**The Final Exam will be cumulative**

## Lecture Schedule (Tentative)

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Week	Date	Topic	Chapter
1	1/21/2017	Chemical World, Measurements and Problem Solving	1,2
2	1/28/2017	Matter and Energy	3
3	2/4/2017	Atoms and Elements	4
4	2/11/2017	Molecules and Compounds	5
5	2/18/2017	Chemical Composition – EXAM #1 (Ch.1-4)	6
6	2/25/2017	Chemical Reactions	7
7	3/4/2017	Quantities in Chemical Reactions	8
8	3/11/2017	Electrons in Atoms and Periodic Table	9
9	3/18/2017	Chemical Bonding EXAM #2 (Ch.5-8)	10
10	3/25/2017	<b>Spring Break No Class</b>	
11	4/1/2017	Gases	11
12	4/8/2017	Liquids, Solids, and Intermolecular Forces	12
13	4/15/2017	Solutions EXAM #3 (Ch.9-12)	13
14	4/22/2017	Acids and Bases	14
15	4/29/2017	Chemical Equilibrium	15
16	5/6/2017	Oxidation Reduction Chemistry	16
17	5/13/2017	Nuclear Chemistry – EXAM #4 (Ch.13-16)	17
18	5/20/2017	<b>Final Exam (Cumulative) 9am – 12pm</b>	

Laboratory Schedule		
Week	Date	Lab
1	1/21/17	No Lab
2	1/28/17	Lab infor, lab safety, notebooks
3	2/4/17	Exp1. Measurements
4	2/11/17	Exp2. Part1. Separation of a Mixture
5	2/18/17	No Lab
6	2/25/17	Exp2. Part2. Separaton of a Mixture
7	3/4/17	Notebook-Report Self Assesement
8	3/11/17	Exp3. Ionic and Molecular Compounds
9	3/18/17	Exp4. Making a NaCl Solution
10	3/25/17	Spring Break
11	4/1/17	Exp5. Solution Concentration Using Hydrometer
12	4/8/17	LAB TBA
13	4/15/17	Exp6. Solution Concentration by Evaporation
14	4/22/17	Exp7. How Much Energy is in Food
15	4/29/17	Exp8. Chemical Reactions
16	5/6/17	Exp8. Chemical Reactions Part 2
17	5/13/17	Exp9. Electricity from a Chemical Reaction
18	5/20/17	TBA