

Instructor: Ian W. Jones Ph.D.
Lecture: MW 3:00 – 4:30 pm
Lab: W 12:00-3:00 pm
Office: TBD
Phone Number: email me!
email: ijones@santarosa.edu
Office Hours: W 4:45 – 6:15 pm
Websites: Canvas

1) Catalog Description

A basic introduction to fundamental laws and principles of the composition of matter, physical and chemical changes, atomic and molecular structure, chemical equilibria, intermolecular forces, solutions, and qualitative and quantitative theory and techniques. This course is a pre-requisite for Chemistry 1A.

2) REQUIRED MATERIALS

- a) **Required:** Introductory Chemistry: Atoms First, Russo & Silver, 5th Edition, Pearson Publishing
- b) **Required:** Laboratory Manual – Chemistry 42, Santa Rosa Junior College
- c) **Required:** Calculating device with Exponential & Logarithmic capabilities. If you do not currently own a scientific calculator, we recommend consultation with your chemistry instructor to select a make and model that will fulfill your academic needs. A cell phone is not a calculator!

3) COURSE PREREQUISITES

- a) **Required:** Course Completion of MATH 154 or Course Completion of MATH 155 or higher or higher or two years of high school algebra or equivalent
- b) **Recommended:** Eligibility for ENGL 100 or ESL 100

4) Student Learning Outcomes (SLO)

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

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

5) Course Objectives

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

- a) Solve problems involving fundamental processes in chemistry, including basic atomic theory, structure and bonding, chemical reactions, equilibrium, and the various forms of matter.
- b) Demonstrate a basic understanding of the above fundamental processes in chemistry and how the scientific method was used to develop the theories behind these processes.
- c) Interpret and utilize the vocabulary and nomenclature that is specific to a basic level of general chemistry.
- d) Follow fundamental safety procedures in a laboratory environment.
- e) Perform simple chemical experiments and associated calculations efficiently and accurately.
- f) Use fundamental processes in chemistry to investigate phenomena in the applied sciences.
- g) Arrange, sort, and graphically represent chemical data.

6) GRADES

The grading system will be explained by your instructor during the first meeting of the semester. The weighting factors for the various types of assignments and the percentage cut-offs are listed below. Realize that both objective factors (such as exam scores and problem/homework scores to which numerical values can be assigned) and subjective factors (such as effort, improvement, initiative, honesty, participation, academic growth, etc., which cannot be easily tagged with a number) will be taken into account at the end of the semester when letter grade assignments are made. It should be remembered that the cut-off points given here serve only as guidelines. Borderline cases will be decided after taking into consideration such factors as: *academic growth, initiative, attendance, punctuality, attitude, and individual motivation.*

WEIGHTING FACTORS

Exams & Quizzes	60%
Online Homework	5%
Lab Reports	20%
Final Examination	15%

TENTATIVE LETTER GRADE RANGES

"A"	87 - 100%
"B"	77 - 86%
"C"	63 - 76%
"D"	50 - 62%
"F"	Below 49%

THE INTERPRETATION OF LETTER GRADES

The "**A**" **grade** indicates that the student exhibits **mastery** of the details, concepts, vocabulary, and operations of the subject matter. The student displays the potential for significant achievement at the professional level.

The "**B**" **grade** indicates that the student exhibits an **understanding** of the details, concepts, vocabulary, and operations of the subject matter. The student displays the determination and commitment in the pursuit of mastery of the subject.

The "**C**" **grade** indicates that the student exhibits an **awareness** of the details and vocabulary of the subject matter, and the capability of performing the **basic operations**, and possesses an **elementary knowledge** of the principal concepts.

The "**D**" **grade** indicates that the student has **awareness** of the details and vocabulary of the subject matter but **lacks the capability** of performing the basic operations or of understanding the basic concepts. This student can be considered to be at the entry level of the class, and would benefit by repeating the course.

The "**F**" **grade** indicates that the student, due to one or more of the following factors, received no discernible benefit from participation in the class.

Failure to take or pass required examinations	Continued lack of preparation
Distracting or disruptive behavior in class	Disregard of instructions
Failure to submit required assignments	Excessive absences

Please remember that instructors do not **give** grades. Grades are **earned** by the student in accordance with the meaning of each letter grade as described above.

7) EXAMINATIONS

There will be **NO** make-up examinations given. If any examination is missed for ANY reason, a score of zero will be recorded. Any midterm exam can be improved by a superior score on the corresponding section of the final exam. The "midterm score" that will be used in this case will be the average of the two scores. This scheme will be explained by your instructor. Confirmed illness will be handled by the instructor on an individual basis as it relates to absence on the day of a midterm examination. On each examination, you are responsible for all textbook and lab assignments to date.

8) RE-EVALUATION OF MIDTERM EXAMS/LAB REPORTS

Written material may be re-examined but the request for re-evaluation should not be based on frivolous reasons. In comparing your graded materials with that of other students, any difference must be confirmed by submission of both students' work for consideration. Students desiring a re-evaluation of graded material must submit the document in question with written detailed rationale for any changes requested. Based on the rationale submitted, the entire assignment will be thoroughly evaluated. The outcome of the re-evaluation may be positive, negative, or result in no change in the original score. **Please use the form found on Canvas.**

9) STANDARDS OF CONDUCT

1. All students are expected to complete the exams and laboratory assignments for this course with total honesty. This responsibility rests primarily with each individual and their conscience, but to maintain high morale and a healthy learning environment, we will not hesitate to take action, including a corresponding grade of "F" on the assignment in question. During examination periods, there will be no inter-student communication. If any questions or problems arise, direct them to your instructor.
2. Laboratory reports must represent your individual effort. In particular, you must not consult with nor use any materials related to laboratory work performed by either current or previous Chemistry 42 students. Violations of this trust will be dealt with very harshly.
3. Violations of the Student Code of Conduct will be dealt with in the appropriate manner.

10) ASSIGNMENTS

- a) Assigned lab reports must represent your own individual effort since collaboration and or copying will not be tolerated. You should be able to complete most assignments by carefully reading (and re-reading) the assigned pages of your text, studying the examples, taking notes, asking questions in lecture, and seeking help from your instructor during posted office hours. Neatness, organization, completeness and accuracy of submitted work are not only expected, **they are demanded**. Any work that is sloppy, poorly organized, incomplete or inaccurately done will be severely graded. **Reports submitted late will not be accepted.**
- b) Unless authorized in advance by your instructor, missed reports constitute grounds for lowering the "apparent" earned letter grade. **Any student with four or more unexcused missing laboratory reports will likely earn an "F" grade in the course.**
- c) If you need help, seek it directly from your instructor well in advance of the due date for a particular assignment. **Questions on the day that a report is due are not appropriate.**

11) ATTENDANCE

Your regular attendance in lecture and laboratory is MANDATORY. Any undue number of absences may result in an individual being dropped from the course, or in a significant reduction of that student's course grade. Students are expected to notify the instructor of any anticipated absences or late/missed assignments prior to the due dates by phone or email. Class meetings start on the hour. Conversations should end at that time, and you should be prepared to commence taking notes. If you arrive late, please enter quietly through the rear door of the classroom. **Cell phones off, or be prepared to bring cookies.**

12) EMERGENCY EVACUATION PLAN

In the event of an emergency during class that requires evacuation of the building, please leave the class immediately, but calmly. Our class will meet in the Bech Parking Lot to make sure everyone exited the building safely and to receive further instructions. If you are a student with a disability who may need assistance in an evacuation, please see me during my office hours as soon as possible so we can discuss an evacuation plan.

13) ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

If you need disability related accommodations for this class, such as a note taker, test taking services, special furniture, use of service animal, etc., please provide the Authorization for Academic Accommodations (AAA letter) from the Disability Resources Department (DRD) to me as soon as possible. You may also speak with me privately during office hours about your accommodations. If you have not received authorization from DRD, it is recommended that you contact them directly. DRD is located in the Bertolini Student Center on the Santa Rosa campus, and Petaluma Village on the Petaluma Campus.

14) RECOMMENDED TEXTBOOK STUDY PROCEDURES

- a) Check the Lecture Schedule and bulletin board frequently.
- b) When readings in a new chapter are assigned, begin by skimming the entire chapter once and read the Summary and Key Terms list. Then go back and carefully study the pages of assigned reading.
- c) Look up the meanings of new terms in the Glossary and jot down questions to ask your instructor. Complete the homework assignment(s) and work as many in-chapter exercises and end-of-chapter problems as possible before coming to the lecture on that material. These attempted and corrected solutions should be organized in a notebook for easy reference prior to examinations.
- d) After the lecture, ask questions from your list that remains unanswered. Take advantage of your instructor's scheduled office hours or make an appointment.

- e) Re-copy or refine your notes, re-read the textbook and work additional end-of-chapter problems while the lecture is still fresh in your mind.
- f) Before examinations, study the text and review your notes and solutions once again.
- g) After the examination, study those areas you were weakest in. Re-work the examination problems until you obtain the correct answers. Use the posted exam key if necessary. Always study the posted key even if you earned a respectable score.

If you start falling behind in the class, seek help from your instructor before it is too late.

Date	Day	Tentative Lecture Activities
21-Aug	Mon	Syllabus and Chapter 1: What is Chemistry
23-Aug	Wed	Chapter 1: What is Chemistry
28-Aug	Mon	Chapter 2: The Numerical Side of Chemistry
30-Aug	Wed	Chapter 3: The Evolution of the Atomic Model
4-Sep	Mon	Labor Day Holiday
6-Sep	Wed	Chapter 4: The Modern Model of the Atom
11-Sep	Mon	Chapter 4: The Modern Model of the Atom
13-Sep	Wed	Exam #1 (Chapters 1-3)
18-Sep	Mon	Chapter 5: Chemical Bonding and Nomenclature
20-Sep	Wed	Chapter 8: Chemical Reactions
25-Sep	Mon	Chapter 9: Stoichiometry and the Mole
27-Sep	Wed	Chapter 9: Stoichiometry and the Mole
2-Oct	Mon	Chapter 7: Intermolecular Forces and the Phases of Matter
4-Oct	Wed	Chapter 6: The Shape of Molecules
9-Oct	Mon	Exam #2 (Chapter 4-9)
11-Oct	Wed	Chapter 10: Electron Transfer in Chemical Reactions
16-Oct	Mon	Chapter 10: Electron Transfer in Chemical Reactions
18-Oct	Wed	Chapter 11: Gases
23-Oct	Mon	Chapter 11: Gases
25-Oct	Wed	Chapter 12: Solutions
30-Oct	Mon	Chapter 12: Solutions
1-Nov	Wed	Chapter 13: Kinetics
6-Nov	Mon	Exam #3 (Chapters 9-12)
8-Nov	Wed	Chapter 13: Kinetics
13-Nov	Mon	Chapter 14: Chemical Equilibrium
15-Nov	Wed	Chapter 14: Chemical Equilibrium
20-Nov	Mon	Chapter 15: Acids and Bases
22-Nov	Wed	Special Class Activity
27-Nov	Mon	Chapter 15: Acids and Bases
29-Nov	Wed	Super Quiz (Chapter 1-14)
4-Dec	Mon	Chapter 15: Acids and Bases
6-Dec	Wed	Chapter 16: Nuclear Chemistry
11-Dec	Mon	Chapter 16: Nuclear Chemistry
13-Dec	Wed	Catch-up and review
18-Dec	Mon	Final Exam: 1:00 - 3:45 pm

Date	Day	Definite Lab Activity
23-Aug	Wed	Lab Intro/Safety/Calculations and Dimensional Analysis
30-Aug	Wed	Locker Check-in/Measurements and Density
6-Sep	Wed	No Lab
13-Sep	Wed	Atoms and the Electromagnetic Spectrum
20-Sep	Wed	Separation of a Ternary Mixture
27-Sep	Wed	Ionic and Molecular Compounds
4-Oct	Wed	Lewis Structures
11-Oct	Wed	Chemical Reactions
18-Oct	Wed	Synthesis of Indigo
25-Oct	Wed	Electrochemistry and Activity Series
1-Nov	Wed	Gas Laws
8-Nov	Wed	No Lab
15-Nov	Wed	Preparation and Concentration of a Solution (Week 1)
22-Nov	Wed	No Lab
29-Nov	Wed	Preparation and Concentration of a Solution (Week 2)
6-Dec	Wed	Acetic Acid Titration
13-Dec	Wed	Locker Check-Out