

Chemistry 42 Syllabus

Introductory General Chemistry

Santa Rosa Junior College, Fall 2017

Instructor: Osman F. Güner

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Class: Bech 1910

Class Hours: Wednesdays & Fridays, 9:00 am – 10:30 am

Laboratory: Bech 1960

Lab Hours: Fridays, 10:30 am – 1:30 pm

Office: Bech 1970

Office Hours: Wednesdays & Fridays, 8:15 am – 9:00 am

Course Information:

Basic, introductory chemistry for students with little or no experience with chemistry. This course is a prerequisite for either a year of general chemistry (Chem 1A, 1B, Chem 4A, 4B) or one semester of organic chemistry (Chem 8). It provides an introduction to fundamental laws and principles of the composition of matter, physical and chemical changes, atomic and molecular structure, chemical equilibria, intermolecular forces, solutions, qualitative and quantitative theory and techniques.

Student Learning Outcomes:

Upon completion of this course, the 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.

Student Objectives:

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

1. Solve problems involving fundamental processes in chemistry, including basic atomic theory, structure and bonding, chemical reactions, equilibrium, and various forms of matter
2. 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
3. Interpret and utilize the vocabulary and nomenclature that is specific to a basic level of general chemistry
4. Follow fundamental safety procedures in a laboratory environment
5. Perform simple chemical experiments and associated calculations efficiently and accurately
6. Use fundamental processes in chemistry to investigate phenomena in the applied sciences
7. Arrange, sort, and graphically represent chemical data

General Course Policies:

1. Prerequisites

Course completion (with a grade of C or higher) of Math 155 or two years of high school algebra (or equivalent)

2. Textbook:

Introductory Chemistry: Atoms First, 5th Edition, Russo • Silver, Publisher- Pearson, ISBN 978-0-321-92711-8

Lab Manual: Chemistry 42 Laboratory Manual, Omrcen, Publisher-Arbor Crest, ISBN 281-8-1201461-4-4

3. Attendance

Attendance is critical for this course. Progressive nature of the material requires a thorough understanding of the previous material in order to understand and build upon the next one. Likewise, the first 5-10 minutes of each class will include a review of important aspects of the previous lecture (such as, things that may come up in the exams). There will not be any make-ups on labs or exams (without a documented medical excuse). Missing more than three labs will result with an automatic fail.

4. Standards of Conduct

All work submitted for grading must be the student's own work. In lab, you must make your own observations and report using your own words. Collaboration is encouraged, but final work submitted must be your own. Students who plagiarize or cheat may be suspended [for one or two class meetings by the instructor] and referred to the Vice President of Student Services for discipline sanction, in cases of egregious violation.

Cellular phones must be silenced during lectures. Texting is not allowed. In case of an emergency that requires you to send a text message or a phone call, you should step outside to do so.

5. Laboratory

Attending lab is mandatory. The concepts learned in the class come alive in the lab. The lectures in class and the experiments in the lab are aligned in a way to complement each other. There will be 13 lab sessions. Lab notebook is required to write down the objective, experimental procedure, observations and results. The lab reports and any pre-lab or post-lab questions, if applicable, are due by the end of the lab session. Failure to deliver lab report at the end of the session or missing a lab will result with a zero grade for that session. Late reports (no longer than 5 days late) will be marked down by 20% of the actual grade. Missing more than three labs will result with an "F" grade for the entire course.

6. Exams

There will be three midterm exams and one final comprehensive exam. The midterm exams will be during regular class hours and it will be based on the previously completed three or four chapters. The final exam will be cumulative with more emphasis on the last four chapters that were not covered in the midterm exams. No make-up exams will be given. Missing an exam will result with a zero grade. A medical excuse will be granted only if proper documentation from a doctor is provided.

7. Emergency Evacuation Plan:

In the event of an emergency during class or lab that requires evacuation of the building, please leave the class immediately, but calmly. Our class will meet at the lawn between Bech, Shuhaw, and Baker Halls to make sure everyone got out of the building safely and to receive further instructions.

8. Accommodation for students with disabilities

Authorization for Academic Accommodations Letter from the Disability Resources Department is needed for any disability-related accommodations, including note-taking, test taking services, and special equipment/furniture, etc. Please let your instructor know about such a need as soon as possible.

9. Grading

Midterms (45%): There will be three midterms each covering 3-4 chapters, 150 points each. Total points 450.

Laboratory (27.5%): There will be 12 lab-reports 25 points each; one lab-report with the lowest grade will be dropped. Total points 275. **Due to campus closure during Sonoma wildfires, the lab "Hess's Law" has been dropped from the schedule. The final 5 labs will be awarded 30 points each, maintaining the 275 points totals.**

Final Exam (27.5%): The final exam will be comprehensive. Total points 275

Final grade (100%): Total points 1000.

The grading scale:

≥88% A	880-1000 points
≥76% B	760-879 points
≥65% C	650-759 points
≥50% D	500-649 points
<50% F	below 500 points

10. Exam dates:

Midterm 1 (Chapters 1-4): Friday, September 15, 2017, 9 – 10:20am

Midterm 2 (Chapters 5-7): Wednesday, November 1, 2017, 9 – 10:20am

Midterm 3 Chapters (8-9, 11-12): Wednesday, December 6, 2017, 9 – 10:20am

Final Exam (comprehensive): Wednesday, December 20, 7 – 9:45am

11. Lab schedule

Week	Day	Date	Laboratory
1	F	8/25/2017	Lab Intro/Safety/Calculations and dimensional Analysis
2	F	9/1/2017	Locker Check/Measurements and Density
3	F	9/8/2017	No labs this week
4	F	9/15/2017	Atoms and the Electromagnetic Spectrum
5	F	9/22/2017	Separation of a Ternary Mixture
6	F	9/29/2017	Ionic and Molecular Compounds
7	F	10/6/2017	Lewis Structures
8	F	10/13/2017	closed due to wildfires
9	F	10/20/2017	closed due to wildfires
10	F	10/27/2017	Chemical Reactions
11	F	11/3/2017	Electrochemistry and Activity Series
12	F	11/10/2017	No labs this week
13	F	11/17/2017	Preparation and Concentration of a Solution (modified to fit in one lab session only)
14	F	11/24/2017	No labs this week
15	F	12/1/2017	Synthesis of Indigo
16	F	12/8/2017	Acetic Acid Titration
17	F	12/15/2017	Locker Check

12. Lecture Schedule

Week	Day	Date	Lecture Topics
1	W	8/23/2017	Course Intro/Chapter 1 (Physical Transformations)
	F	8/25/2017	Chapter 2 (Significant Figures/Scientific Notation)
2	W	8/30/2017	Chapter 2 (Units/Density/Dimensional Analysis)
	F	9/1/2017	Chapter 3 (Atomic Theory/Atomic Structure)
3	W	9/6/2017	Chapter 3 (Atomic Theory/Periodic Table)
	F	9/8/2017	Chapter 4 (Modern Atomic Model/Bohr Theory)
4	W	9/13/2017	Chapter 4 (Electron Configuration/Octet Rule)
	F	9/15/2017	Exam I (Chapters 1-4)
5	W	9/20/2017	Chapter 5 (Bonding/Nomenclature)
	F	9/22/2017	Chapter 5 (Dot Structure/Electronegativity)
6	W	9/27/2017	Chapter 6 (Molecular Shape)
	F	9/29/2017	Chapter 6 (VSEPR)
7	W	10/4/2017	Chapter 7 (Intermolecular Forces)
	F	10/6/2017	Chapter 7 (Phases of Matter)
8	W	10/11/2017	closed due to wildfires
	F	10/13/2017	closed due to wildfires
9	W	10/18/2017	closed due to wildfires
	F	10/20/2017	closed due to wildfires
10	W	10/25/2017	Chapter 8 (Reactions)
	F	10/27/2017	Chapter 8 (Reactions)
11	W	11/1/2017	Exam II (Chapters 5-7)
	F	11/3/2017	Chapter 9 (Stoichiometry/Moles)
12	W	11/8/2017	Chapter 9 (Stoichiometry/Moles)
	F	11/10/2017	Veteran's Day Holiday
13	W	11/15/2017	Chapter 11 (Gas Law)
	F	11/17/2017	Chapter 12 (Solutions)
14	W	11/22/2017	Chapter 12 (Solutions)
	Th	11/23/2017	Thanksgiving Holiday
	F	11/24/2017	Professional Development Day - No classes
15	W	11/29/2017	Chapter 13 (Kinetics)
	F	12/1/2017	Chapter 13 (Kinetics)
16	W	12/6/2017	Exam III (Chapters 8-9, 11-12)
	F	12/8/2017	Chapter 15 (Acids/Bases)
17	W	12/13/2017	Chapter 15 (Acids/Bases)
	F	12/15/2017	Chemistry Review
18	W	12/20/2017	FINAL EXAM (Comprehensive)
		12/23-1/14	Semester Break