

De Anza College
Chemistry 50 (Preparation Course for General Chemistry)
Spring 2015
Course Syllabus

Instructor: Dr. David Feiler
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Office Hours: TBD

1. **Content and Goals:**

An introduction to the core theory and problem-solving techniques of chemistry as preparation for Chemistry 1A and other science related fields. An introduction to gravimetric and volumetric analysis, rudimentary laboratory equipment and operations, and the preparation and maintenance of a laboratory notebook.

Student Learning Outcomes:

- a. Assess the fundamental concepts of modern atomic and molecular theory.
- b. Evaluate the standard classes of chemical reactions.
- c. Demonstrate a fundamental understanding of mathematical concepts pertaining to chemical experimentation and calculations.

2. **Prerequisites:**

Mathematics 114 or equivalent.

Advisory: English Writing 1A or English as a Second Language 5.

3. **Required Materials:**

- a. Corwin, Charles H. Introductory Chemistry, Concepts & Critical Thinking, 6th Edition, Prentice Hall (2011) ISBN 13: 978-0-321-66305-4, ISBN 10: 0-321-66305-5.
- b. Corwin, Charles H. Introductory Chemistry, Concepts & Critical Thinking Laboratory Manual, 6th Edition, Prentice Hall (2013) ISBN-10: 0-321-75094-2; ISBN-13: 978-0-321-75094-5
- c. Safety goggles (approved by OSHA) for working in the chemistry lab: available at the bookstore.
- d. Scientific calculator.
- e. Lab notebook (sewn; not spiral bound) for recording laboratory data
- f. Laboratory apron or coat to protect yourself and your clothes (Optional)
- g. Stapler (No unstapled assignments will be accepted)

4. **Basis of Evaluation:**

a. Midterm Exams:

Three midterm exams will be given during the lecture period. Exams will cover all lectures up to the time of exam including the homework assignments. No make-up exams shall be given. For the exam schedule, see the lecture schedule attached.

b. Final Exam:

A comprehensive final exam will be given during finals week.

- c. Homework:
Homework for each chapter will be due the week after the lecture material is completed. No late homework will be accepted. Homework will be graded on a basis of completeness. You will not receive full credit by copying the answers. You are welcome to work with your classmates but you are required to do your own work. The homework assignments are designed to help you learn and retain course material; it would not be helpful to you to copy answers without investing any effort. Please see the attached homework assignment sheet for the assigned problems.
- d. Lab Reports:
Lab reports are due one week after the completion of the experiment. Lab report "Format" will be discussed by your lab instructor at the beginning of the quarter. Lab reports will be graded on clarity, completion of work assigned, and accuracy and precision of your results. To get a perfect score on your lab report, you will have to meet ALL of the above criteria. No late lab reports will be accepted.
- e. Lab Exam:
A final lab exam will be given at the end of the quarter testing the student on various aspects of the experiments.

5. Grading:

The course grade earned will depend on the sum total points earned in lecture and lab. The following weighting factors will be used:

<u>Lecture</u>		<u>Laboratory</u>	
3 Midterm Exams	45%	9 Lab Reports	25%
1 Final Exam	20%	1 Lab Exam	<u>5%</u>
14 Homeworks	<u>5%</u>		
Subtotal	70%		30%
Total = 100%			

The grade, which you will earn, depends on your achievements in relation to the minimum performance standard. The following table provides an approximate guide to correlating an accumulated total point % with an earned course grade.

<u>Letter Grade</u>	<u>Total Point (%)</u>
A+	97% 100%
A	94% 96%
A-	89% 93%
B+	85% 88%
B	81% 84%
B-	77% 80%
C+	73% 76%
C	65% 72%
D+	60% 64%

D	55% 59%
D-	50% 54%
F	0% 49%

6. Academic Honesty:

The instructor deems academic honesty essential for personal integrity. Anyone caught cheating in quiz or exam or copying other's work in the lab will have his work voided and upon repeated violation, will fail the course. Conduct yourself accordingly to remove any suspicion in the instructor's eyes all together.

Best wishes for a successful quarter in chemistry.

Dr. Feiler

Chemistry 50 Lecture Schedule (Lecture meets in G6 @ 10:30AM)**Spring 2015 Lecture Schedule**

<i>Week of</i>	<i>Tuesday</i>	<i>Thursday</i>
Apr 6	Introduction to Chemistry (Ch. 1)	Scientific Measurements (Ch. 2)
Apr 13	The Metric System (Ch. 3)	Matter and Energy (Ch. 4)
Apr 20	Matter and Energy (Ch. 4)	Models of the Atom (Ch. 5)
Apr 27	Exam #1 (Ch. 1,2,3,4,5)	The Periodic Table (Ch. 6)
May 4	Language of Chemistry (Ch. 7)	Chemical Reactions (Ch. 8)
May 11	The Mole Concept (Ch. 9)	The Mole Concept (Ch. 9)
May 18	Exam #2 (Ch. 6,7,8,9)	Chemical Equation Calculations (Ch. 10)
May 25	The Gaseous State (Ch.11)	Chemical Bonding (Ch.12)
Jun 1	Liquids and Solids (Ch. 13)	Liquids and Solids (Ch. 13)
Jun 8	Exam #3 (Ch. 10,11,12,13)	Solutions (Ch. 14)
Jun 15	Solutions (Ch. 14)	Acids and Bases (Ch. 15)
Jun 22		Final Exam 9:15 to 11:15 AM (Chapters 1 to 15)

Chemistry 50 Laboratory Schedule (Lab meets in SC2208 @ 7:30AM)

Spring 2015 Lab Schedule

<i>Week of</i>	<i>Tuesday (42977)</i>	<i>Thursday (42692)</i>
Apr 6	CHECK-IN	CHECK-IN
Apr 13	E2: INSTRUMENTAL MEASUREMENTS	E2: INSTRUMENTAL MEASUREMENTS
Apr 20	E3: DENSITY OF LIQUIDS & SOLIDS	E3: DENSITY OF LIQUIDS & SOLIDS
Apr 27	E5: PHYSICAL & CHEMICAL PROPERTIES	E5: PHYSICAL & CHEMICAL PROPERTIES
May 4	E7: FAMILIES OF ELEMENTS	E7: FAMILIES OF ELEMENTS
May 11	E13: ANALYSIS OF ALUM	E13: ANALYSIS OF ALUM
May 18	E10: ANALYSIS OF A PENNY	E10: ANALYSIS OF A PENNY
May 25	E14: DECOMPOSING BAKING SODA	E14: DECOMPOSING BAKING SODA
Jun 1	E21: ELECTRICAL CONDUCTIVITY OF AQUEOUS SOLUTIONS	E21: ELECTRICAL CONDUCTIVITY OF AQUEOUS SOLUTIONS
Jun 8	E20: ANALYSIS OF VINEGAR	E20: ANALYSIS OF VINEGAR
Jun 15	LAB EXAM AND CHECK-OUT	LAB EXAM AND CHECK-OUT
Jun 22		

HOMEWORK ASSIGNMENT SHEET:

No late homework will be accepted. Homework will be graded on basis of completeness. You will not receive full credit by copying the answers. You are welcome to work with your classmates but you are required to do your own work. The homework assignments are designed to help you learn and retain course material; it would not be helpful to you to copy answers without investing any effort. You will find the problems assigned at the end of each chapter.

CHAPTER 2

2, 4, 6, 8, 10, 14, 16 (A, B), 18, 20, 24, 26, 28, 32, 34, 38(A, D), 42, 44, 50, 54, 58, 62, 66, 68, 72, 76

CHAPTER 3

2, 4, 6, 10, 14, 16, 18, 22, 28, 32, 36, 38, 40, 44, 46, 48, 54, 56, 60, 62, 64.

CHAPTER 4

4, 6, 8, 10, 12, 14, 16, 18, 20, 24, 26, 28, 32, 36, 40, 44, 46, 50, 72, 74, 76

CHAPTER 5

6, 14, 16, 18, 22, 30, 36, 38, 54, 58, 62, 66, 72, 76, 80, 86, 90

CHAPTER 6

4, 8, 12, 16, 20, 24, 26, 28, 30, 34, 38, 40, 44, 48, 54, 58, 62, 66, 68, 70, 74, 80

CHAPTER 7

2, 6, 10, 14, 18, 22, 24, 26, 30, 34, 38, 42, 46, 48, 50, 54, 58, 62, 66, 70, 74

CHAPTER 8

6, 10, 14, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60, 64, 68, 72, 76, 80

CHAPTER 9

4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60, 64, 68, 72, 76, 80

CHAPTER 10

4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60, 64, 72, 76

CHAPTER 11

2, 6, 10, 14, 18, 22, 26, 30, 34, 38, 42, 46, 50, 54, 58, 62, 66, 70, 74, 78

CHAPTER 12

2, 6, 10, 14, 18, 22, 26, 30, 34, 38, 42, 46, 50, 54, 58, 62, 66, 70, 74, 78

CHAPTER 13

2, 6, 12, 16, 24, 28, 34, 38, 46, 54, 58, 64, 66, 70, 74, 78

CHAPTER 14

4, 6, 10, 14, 18, 22, 26, 30, 34, 38, 42, 46, 50, 54, 58, 62, 66, 68, 70, 74

CHAPTER 15

2, 6, 10, 14, 18, 22, 26, 30, 34, 38, 42, 46, 50, 54, 58, 62, 66, 70, 74, 78

Chemistry 50 Spring 2015

In order to serve you better and to get to know you as an individual, please take some time to answer the questions below. Thank you!

Full Name: _____

Nickname (Name you prefer to go by): _____

Why are you taking this class?

List any Chemistry course(s) you have previously taken, including high school:

What is the highest level math class you have completed?

What is your probable major?

What career goals are of interest to you?

What are your favorite academic subjects?

What are your hobbies and pastimes?

Anything else you would like to tell me about yourself?

Continued on other side

Employment _____ How many hours per week? _____

What other courses have you enrolled in this quarter?

Course	Instructor	days and times

From the American Chemical Society Safety In Academic Laboratories Guidelines, 7th Ed., the following mandatory minimum safety requirements must be followed by all students and be rigorously enforced by all Chemistry faculty:

- 1) Chemistry Department-approved safety goggles purchased from the De Anza College bookstore (NOT safety glasses) must be worn at all times once laboratory work begins, including when obtaining equipment from the stockroom or removing equipment from student drawers, and may not be removed until all laboratory work has ended and all glassware has been returned to student drawers.
- 2) Shoes that completely enclose the foot are to be worn at all times; NO sandals, open-toed, or open-topped shoes, or slippers, even with socks on, are to be worn in the lab
- 3) Shorts, cut-offs, skirts or pants exposing skin above the ankle, and sleeveless tops may not be worn in the lab: ankle-length clothing must be worn at all times
- 4) Hair reaching the top of the shoulders must be tied back securely
- 5) Loose clothing must be constrained
- 6) Wearing "...jewelry such as rings, bracelets, and wristwatches in the laboratory..." should be discouraged to prevent "...chemical seepage in between the jewelry and skin...".
- 7) Eating, drinking, or applying cosmetics in the laboratory is forbidden at ALL times, including during lab lecture
- 8) Use of electronic devices requiring headphones in the laboratory is prohibited at ALL times, including during lab lecture
- 9) Students are advised to inform their instructor about any pre-existing medical conditions, such as pregnancy, epilepsy, or diabetes, that they have that might affect their performance.
- 10) Students are required to know the locations of the eyewash stations, emergency shower, and all exits
- 11) Students may not be in the lab without an instructor being present
- 12) Students not enrolled in the laboratory class may not be in the lab at any time after the first lab period of each quarter.
- 13) Except for soapy or clear rinse water from washing glassware, NO CHEMICALS MAY BE Poured INTO THE SINKS; all remaining chemicals from an experiment must be poured into the waste bottle provided.
- 14) Students are required to follow the De Anza College Code of Conduct at all times while in lab: "horseplay", yelling, offensive language, or any behavior that could startle or frighten another student is not allowed during lab;
- 15) Strongly recommended: Wear Nitrile gloves while performing lab work; wear a chemically resistant lab coat or lab apron; wear shoes made of leather or polymeric leather substitute.

By signing below, I, _____,

First Name

Family Name

acknowledge that I fully understand and agree to abide by the laboratory safety rules listed above. Further, I acknowledge that my failure to abide by these rules will result in my being dropped from this chemistry class immediately.

Signature

Date