

Dr. Valeria Martinovic**martinovicvaleria@fhda.edu****LECTURE:** Mondays/Wednesdays 5:30-7:20 PM**LAB:** Wednesdays 7:30-10:20 PM**OFFICE HOURS:** as needed

Welcome to Chem 25 - your introduction to chemistry as the language of matter. This syllabus gives you key information, expectations and a schedule for this course. **It is very important that you read all of the lecture and lab syllabi to understand how this class works.** Chem 25 is intended for students who need background preparation for CHEM 1A or to meet general education requirements in physical science. The course includes an introduction to atoms, elements and compounds, reactions and important chemical principles, as well as basic chemical laboratory techniques and problem solving. Prerequisite: Passing score on math placement test or MATH 105/108. Proficiency in understanding verbal instructions in English is essential for success in the lab.

REQUIRED COURSE MATERIALS from the BOOKSTORE or Online**Required Materials:**

1. *Introduction to Chemistry, 4th edition* by **Bauer, Birk, and Marks** (McGraw-Hill)

I will use this text for guiding my lectures. The physical text is expensive, I recommend the e-text as the most cost effective option. Another option is to purchase a used text online.

2. **ONLINE HOMEWORK:** <http://connect.mheducation.com/class/v-martinovic-chem25w2018>

3. *Preparation for General Chemistry: Chem 25*, by **Applegate, Neely, and Sakuta** (McGraw-Hill).

Note: This must be purchased from the De Anza Book Store. It is not available anywhere else.

4. A scientific calculator that has at least log and exponential functions is required (~ \$12). **Graphing calculators will not be allowed!**

5. 8.5 x 11 permanently bound **laboratory notebook with duplicate copies.**

6. OSHA approved **laboratory safety goggles from the bookstore.** Other types of goggles will not be permitted.

7. **Latex or Nitrile Gloves** available from the bookstore.

OVERALL COURSE GRADE

Your grade in this course will be determined based on your points in the following categories:

Midterm & Final Exams (each)	100	Laboratory reports (each) - due at the end of the lab	5
Homework	100	Laboratory Final Exam	50
Laboratory prep reports (each) - checked at the beginning of each lab	5		

All grades will be assigned according to the following percentage scale:

A+ ≥ 98% A ≥ 92% A- ≥ 89% B+ ≥ 85% B ≥ 82% B- ≥ 79% C+ ≥ 75% C ≥ 68% D ≥ 64% D- ≥ 58% F < 58

LECTURE EXAMS

There will be lecture a midterm exams, and a final exam given in this course. All will test your problem solving skills, your conceptual understanding of the material and your ability to integrate concepts. These exams will focus on (1) the key course and lab concepts, (2) the lecture slides, (3) the online homework assignments, and (4) the text problems. The dates are on the course schedule; any changes will be announced in class. Bring a SCANTRON form and a scientific calculator for all LECTURE quizzes/exams.

Midterm and Final Exams - 1.5 Hours each

Midterm and Final Exams are **REQUIRED**. These exams will be a combination of multiple choice and free response questions. There will be **NO MAKE-UP LECTURE EXAMS** administered in this course. If you miss an exam then a grade of zero will be recorded. **NO EXAMS WILL BE RESCHEDULED** for YOUR CONVENIENCE.

Final Lab Exam - One hour each

There will be **NO MAKE-UP LAB EXAM** administered in this course. If you miss exam then a grade of zero will be recorded. **NO EXAM WILL BE RESCHEDULED** for YOUR CONVENIENCE.

CLASS POLICIES: These policies make up part of the basis for your grade, especially in lab.



Attendance and preparation: are expected and will be assessed as part of your grade.



If you miss the **FIRST** (Adds processed) or **SECOND** (SAFETY) lab session you will automatically be dropped.



If you miss (or cannot attend) your scheduled lab, you may come to an alternate lab meeting the same week with my permission. Your lowest lab report score will be dropped.



Arrive to class and lab on time, with the proper supplies, including a calculator.



Be prepared for lab (understand the lab procedure). This is essential for safety. A summary of the lab procedure must be turned-in during the first ten minutes of lab. **STAMPED**.



Pay attention in class: Laptops are allowed only for following the lectures slides. **Use of a cell phone in lectures or lab for any reason is not allowed without express permission.** *If you have an emergency call, quietly leave the class.*



Academic integrity: It is your responsibility to understand what constitutes academic dishonesty in accordance with the Foothill College Academic Honor Code (www.foothill.edu/services/honor). If you are caught cheating or plagiarizing at any time, then your violation will be reported and you may be dropped from the course. **In this course, cheating includes using data/results or discussion question responses from lab reports of former students.**

PRACTICE PROBLEMS.

Chapter	Text Problems	Chapter	Text Problems
1	4,8,12,14,18, 22, 28, 34, 40, 46, 52, 58, 60, 68, 76, 80, 86, 90, 96, 108	6	4, 8,10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 56, 58, 60, 62, 64, 68, 72, 74, 76, 78, 84, 86, 90, 92, 84
2	2,10, 28, 30, 34, 38, 48, 50, 54, 74, 78, 86, 92, 94, 98, 104, 106, 108	7	2, 12, 14, 16, 18, 24, 28, 30, 36, 40, 44, 46, 48, 50, 52, 54, 62, 64, 66, 68, 72, 76, 78, 80, 82, 84
3	2, 4, 8, 10, 12, 14, 18, 20, 22, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 54, 60, 62, 66, 68, 70, 82, 84, 86, 88, 90	8	2, 8, 10, 14, 16, 20, 22, 24, 26, 30, 32, 34, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 86, 88, 90, 92, 94,100, 113, 120
4	4, 8, 10, 12, 18, 20, 22, 24, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 54, 56, 58, 60, 68, 70, 72, 74, 76, 78, 80, 84, 86, 88, 100, 102, 104, 106, 108, 110, 112, 114, 116, 118, 120	9	14, 16, 20, 22, 24, 26, 30, 38, 40, 42, 44, 50, 52, 58, 60, 62, 64, 66, 68, 70, 72, 86, 88, 90, 92, 94,100, 102, 116

5	6, 8, 18, 24, 28, 30, 38, 40, 42, 46, 48, 52, 56, 58, 60, 64, 74b, 78, 92, 96, 102 a) chromium (II) hydroxide is a solid, b) lead (II) chromate is		
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LABORATORY

The beginning of each laboratory session is used to review the objectives, procedure, safety and waste disposal information for each experiment. You must arrive on time in order to perform the scheduled experiment. In addition, you are also required to write a hand-written outline of the experiment that is due at the beginning of lab. More details will be given in the laboratory. The instructor will use the lecture period to outline important details of the procedure, overview the theory and calculations, and emphasize safety hazards and proper chemical disposal.

LABORATORY DRAWER CHECK-IN/OUT

Students will be paired-up and assigned a specific laboratory equipment drawer and will be responsible for completing a satisfactory inventory of the contents at the beginning (drawer check-in) and end (check-out) of the quarter.

LABORATORY SAFETY AND PREPARATION

Laboratory safety will be discussed in the SECOND lab session. It is expected that you put safety first in the laboratory, and if you deliberately neglect the directed safety rules, then you will be dropped from this course. A safety exam will be given during the second lab session, which must be passed with a grade of 85% or higher to remain in the class. For your protection, safety goggles or Visorgogs must be worn AT ALL TIMES during experiments in the laboratory. These can be purchased in the bookstore. Appropriate clothing and shoes are also required.

LABORATORY GRADE COMPONENTS

Your lab grade is composed of scores from the procedure outlines, laboratory reports and lab quizzes.

- PRELAB Preparation: The handwritten procedure outlines are due at the beginning of lab lecture. STAMPED.
- LAB REPORTS: The nature and due date of each laboratory assignment will be specified during the lab lecture. For many experiments, you will be collecting data with a partner, however you must do your own calculations and formulate your own conclusions for each experiment. There will be NO MAKE-UP EXPERIMENTS.
- **You must pass (C or better) the lab portion of the class** in order to receive an overall passing grade.
- If you miss more than 2 lab periods, you may receive a D or F for your course grade.

Tentative Schedule:

Week of	Lectures -Mondays/Wednesdays	Lab - Wednesdays
(1) Jan 8	Ch. 1/2	ATTENDANCE MANDATORY - Laboratory Drawer Check-In Introduction to the Laboratory: Measurements, Uncertainty and Significant Figures
(2) Jan 15	NO LECTURE Martin Luther King Day	Lab 1: Measurements, Uncertainty and Significant Figures
(3) Jan 22	Ch.2/3	Lab 2: Density and Gravity
(4) Jan 29	Ch. 4	LECTURE EXAM 1: Lab 3: Atomic Structure
(5) Feb 05	Ch.4/5	Lab 4: Ionic Compounds
(6) Feb 12	Ch.5/6	Lab 5: Covalent Compounds
(7) Feb 19	NO LECTURE - Presidents' Day	LECTURE EXAM 2: Lab 6: Empirical Formulas
(8) Feb 26	Ch.6	Lab 7: Chemical Reactions
(9) Mar 05	Ch.7/8	Lab 8: Gas Laws
(10) Mar 12	Ch.8	Lab 9: Vinegar Analysis
(11) Mar 19	Ch.9	LAB FINAL CHECK OUT

Week of	Lectures -Mondays/Wednesdays	Lab - Wednesdays
(12) Mar 26	FINAL EXAM on Monday 6:15 - 8:15 pm	NO LAB

ONLINE HOMEWORK: <http://connect.mheducation.com/class/v-martinovic-chem25w2018>

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

Student Learning Outcome(s):

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