

CHEMISTRY 112L
Spring Semester 2021

Instructor: Dr. Daniel Stelck

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Office Hours: 1:30 - 2:20: M, W, F (online: <https://uidaho.zoom.us/j/98266027838>)

Textbook: None: All laboratory procedures are online

Home Page: <https://danstelck.weebly.com/chemistry-112l.html>

Electronic devices: All cell phones and personal music players must **be turned off and put away** during the laboratory.

Calculator: An inexpensive, non-text entry/non-graphing scientific calculator is required. It should have capabilities for square roots, logarithms, exponentiation (antilogarithms), and exponential (scientific) notation operations.

RECITATION

A 50 minute recitation period is scheduled each week. The Chemistry 112 recitation is not optional. The purpose of recitation is to review and go over problems relevant to laboratory material and if time permits your TA may review lecture material. Prior to recitation, you should have reviewed the current week's laboratory experiment. Ask your recitation instructor to go over any concepts, exercises, or textbook (not assigned homework) problems that you had trouble with.

A five-point quiz will be given at the end of all recitation classes. You must be present and participating during the entire recitation if you wish to take the quiz. **NO MAKE-UP QUIZZES WILL BE GIVEN.** If you miss a quiz for any reason, you will receive no credit for that quiz. Your semester recitation score will be determined by adding together your ten best quiz scores.

LABORATORY

One 3-hour laboratory is scheduled during most weeks. You are expected to come to lab on time and adequately prepared. Prior to each laboratory, you must transcribe your experiment for the week into a lab notebook. Experiments may not be printed out in the laboratory. A short quiz may be given at the beginning of any of the labs. You will be assigned to either Group 1 (12 students) or Group 2 (12 students) for your laboratory section. Refer to the schedule to see when you will need to show up to perform that week's experiment. The week that your group is not scheduled to attend lab, you will be emailed the data from a Group partner so you may be able to turn in a Lab Report.

NO LAB GRADES WILL BE DROPPED.

In laboratory, you will have the opportunity to experience directly some chemical principles and relationships. Some chemical concepts will be introduced in lecture and some will be introduced in the laboratory. Lab grades will be based on: a) preparation; b) safe work practices; c) quizzes; d) performance; e) reports; and f) comprehension of lab material.

Make-up laboratories will only be given for University excused absences. In order to schedule a make-up lab, you must make arrangements with Yuwei Kan in Lab Services (REN 229). In the case of University excused athletic events and field trips, arrangements must be made at least a week prior to the absence. In the case of sudden severe illnesses, notify Lab Services (chem-labservices@uidaho.edu) as soon as you realize that you are too ill to attend lab. You must bring a note to Dr. Kan in Lab Services (REN 229) from your doctor stating that you were too ill to attend lab as soon as you are back in classes.

In order to pass Chemistry 112L, you must complete at least 10 of the 12 laboratory sessions and achieve a score of at least 60%.

CHEMISTRY 112 LABORATORY SCHEDULE

The laboratory is an integral part of the course. You are expected to attend and to participate in all your Group's scheduled labs. Failure to complete more than two laboratory sessions will result in a failing grade for the entire course.

Download the experiments from the laboratory page of the course web site and be sure to transcribe the lab procedure **PRIOR** to coming to lab.

Exp. #	Week of	Laboratory
1	Jan 11	No Lab
2	Jan 18	Safety and Orientation (online only)
3	Jan 25	Chemistry of White Wine (Part A) Group 1
4	Feb 1	Chemistry of White Wine (Part B and C) Group 2
5	Feb 8	Molar Mass of a Solute Group 1
6	Feb 15	Qualitative Analysis Group 2
7	Feb 22	Determination of an Equilibrium Constant Group 1
8	Mar 1	LeChatelier's Principle and Buffers Group 2
9	Mar 8	Titration Curves Group 1
10	Mar 15	Spring Break - No Lab
11	Mar 22	No Lab
12	Mar 29	No Lab
13	Apr 5	Solubility and the Common-Ion Effect Group 2
14	Apr 12	Factors that Affect the Rates of Chemical Reactions Group 1
15	Apr 19	Kinetics of the Iodination of Acetone Group 2
16	Apr 26	Bleach Analysis Group 1
17	May 3	Voltaic and Electrolytic Cells Group 2
18	May 10	Finals Week

After taking this course, a successful student should be able to:

- ❖ define, explain, and communicate using basic terminology as it relates to:
 - states of matter
 - solutions
 - acids and bases
 - equilibria
 - kinetics
 - electrochemistry
 - thermodynamics

- ❖ solve problems and/or perform calculations associated with:
 - heating curves
 - the Clausius-Clapeyron equation
 - unit-cells
 - concentration: molarity, molality, mass percent, and mole fractions
 - colligative properties: vapor pressure lowering, freezing point depression, boiling point elevation and osmotic pressure

 - rate laws and half-life
 - the Arrhenius equation
 - mechanisms
 - pH
 - equilibria: use equilibrium concentrations to determine equilibrium constants and use equilibrium constants to determine equilibrium concentrations for general, acid/base, and solubility equilibria

 - LeChâtelier's principle
 - thermodynamics: enthalpy, entropy, and Gibb's energy
 - voltaic and electrolytic cells

- ❖ apply laboratory techniques learned in Chemistry 111 to new and more complex Chemistry 112 based experiments

Healthy Vandals Policies

It is a longstanding tradition that Vandals take care of Vandals, and we all do our best to look out for the Vandal Family. These simple precautions go a long way in reducing the impact of coronavirus on our campuses and in our communities. With everyone engaging in these small actions, we can continue to participate in our vibrant campus culture where we are able to learn, live, and grow. Please bookmark the [University of Idaho Covid-19 webpage](#) and visit it often for the most up-to-date information about the U of I's response to Covid-19.

1. **Daily Symptom Monitoring and In-Person Class Attendance.** Evaluate your own health status before attending in-person classes and **refrain from attending class in-person if you are ill, if you are experiencing any of the [known symptoms of coronavirus](#), or if you have tested positive for COVID-19 or have been potentially exposed to someone with COVID-19.**
 - If you display symptoms and/or test positive, you should quarantine following the [CDC's recommendations](#). Do not return to class until you meet the [CDC's requirements](#).
 - If you have been exposed but are asymptomatic, you should stay home for 14 days from last exposure if you remain asymptomatic, adhering to the [CDC's requirements](#).

If you miss an in-person class session, you may be able to attend via Zoom and possibly access course materials on BbLearn. Documentation (a doctor's note) for medical excuses is not required; instead, email me to make arrangements to submit any missed work and make plans to use Zoom and/or online course materials to stay current with the course schedule.

2. **Face Coverings.** All faculty, staff, students and visitors across all U of I locations must use face coverings whenever in any U of I buildings. **You are required to wear a face covering over your nose and mouth in this classroom at all times.**
 - a. If you have a medical condition that you believe affects your ability to comply with the face covering policy, please contact [the Center for Disability Access and Resources \(CDAR\)](#) to request a reasonable accommodation.
 - b. If you have other reasons you believe make you exempt from wearing face coverings, please contact the Covid-19 Coordinator at covid19questions@uidaho.edu.
 - c. Failure to wear a face covering means you will be required to leave the classroom. If a disruption to the learning experience occurs due to repeated offence and/or egregious behavior, it will be referred to the Dean of Students Office for potential code violation.