

Introduction to Experimentation 01:160:171 - A Remote Course Fall 2020 Syllabus

This fall 2020 session of 160:171, Introduction to Experimentation will be a remote course. All assignments must be completed; any assignment not completed will be given a zero. Assignments will be uploaded to their corresponding assignment folder on Sakai. The assignments folder will be closed for submission after the submission date has passed. This syllabus presents information regarding the course policy and safety, which all students must read. Failure to comply with the rules contained in this document can result in a loss of points and a consequent reduction in grade. No appeal will be considered on the grounds that you did not understand the rules.

Course Personnel

Coordinator - Prof. Michael Vitarelli: mvitarel@chem.rutgers.edu
Section instructors names and e-mail addresses can be found on Sakai.

Text Book

You need to purchase the text for this course:
Introduction to Chemistry Lab Manual
Author(s): Donald Siegel
Edition: 2
Copyright: 2019
Pages: 166
ISBN 9781524977993

Do not buy the 1st edition, it is completely different from the 2nd edition. The second edition can be purchased directly from the publisher:

<https://he.kendallhunt.com/product/introduction-chemistry-lab-manual>

You may purchase the physical book or e-book.

Experiments and Dates

Week	Due By	Experiment
1	9/11/20	Submit Safety Quiz
2	9/18/20	Submit Density of Water
3	9/25/20	Submit Density of Matter
4	10/2/20	Submit Paper Chromatography
5	10/9/20	Submit Water of hydration
6	10/16/20	Submit Net Ionic equations
7	10/23/20	Submit Empirical formula of copper chloride
8	10/30/20	Submit Reactivity of metals
9	11/6/20	Submit Volumetric Analysis: An Acid-Base Titration
10	11/13/20	Submit Evaluation of Commercial ant-acids
11	11/20/20	Submit Determining molar volume of carbon dioxide
12	11/27/20	Submit Enthalpy of Formation of Ammonium Salts
13	12/4/20	Submit Magnetic Susceptibility
14	12/10/20	Submit Review Assignment

Except for the Safety Quiz, Density of Water, and Review Assignment each assignment has a pre-lab, chemical hazards form, post-lab, cover sheet, and data sheet; all graphs and tables must also be submitted. Simply scan or take a picture and upload to the corresponding assignment folder on Sakai. These all must be submitted to the corresponding folder on Sakai. Failure to do so will yield a zero for the missing assignment. For each assignment students with either watch a video of the experiment and calculate results based on that video or perform a virtual experiment. These virtual experiments will be JavaScript web apps. Each assignment is due by 11:55 PM on the corresponding Friday. This is true except for the review assignment which is due by 11:55 PM on December 10th, a Thursday.

Point distribution and course grades

The course is out of a total of 774 points as indicated in the table below.

Item	Points
Safety Quiz	10
Density of Water	35
Labs (11 @ 59 points each)	649
Review Assignment	80
Total	774

Before Each Lab

Before each lab you must read the experiment thoroughly, answer the pre lab assignment, and fill out the chemical hazard awareness form for the chemicals you would have encountered in that experiment and what precautions you must take in handling them. The pre lab assignments are **NOT** the ones presented in the lab manual. These assignments are located on Sakai.

Academic honesty

Use of lab reports from other students (past or present) is expressly forbidden. Both the lender and the borrower are subject to severe penalties. You must perform all the work (including the data analysis and answering of questions) yourself. The university's policy on Academic integrity can be found at <http://academicintegrity.rutgers.edu/policy-on-academic-integrity>

Lab Safety Rules

1. An instructor must be present in the labs at all times. You are not permitted to be in the laboratory when a lab instructor is not present.
2. Report all accidents and injuries to your lab instructor.
3. Follow the procedures in the lab manuals, and only those procedures. You are only allowed to do authorized experiments.
4. Horseplay in the lab is unacceptable behavior and is cause for immediate ejection.
5. You must wear safety goggles on your eyes in the lab at all times.

6. Contact lenses are not permitted; trapped vapors may cause injury to the eye.

7. Know the location and use of the closest eyewash, safety shower, and fire extinguisher. If you get chemicals in the eye, immediately flush the eye with copious amounts of water from the eyewash. For other parts of your body, wash the affected area thoroughly using the sink or safety shower.

8. Keep your book bags and non-lab essentials in the cubbies.

9. Bare feet, legs, or midriffs are not allowed in a chemistry lab. Sandals, open-toed or open-backed and open-topped shoes, shorts, or halters are not enough protection. Legs must be covered completely. If you have long hair it must be tied back. If you are not properly attired, you will not be admitted to the lab. If you are ejected from the lab for improper dress, you will not be permitted back until you are properly dressed. If you miss the lab, or do not finish, you will not be permitted to make the lab up, and the absence will NOT be considered excused. If your back is exposed when you bend over then your top is too short and you will not be allowed to work.

10. The vapors of a number of solutions are quite potent and can irritate or damage the mucous membranes of your nasal passages and throat. Do not smell any chemicals. Also, never taste chemicals or solutions. They may be poisonous or corrosive.

11. Always keep burners under the hood. Never apply heat to the bottom of the test tube; always apply it to the point at which the solution is highest in the tube. A suddenly formed bubble of vapor may eject the hot and perhaps corrosive contents violently from the tube.

12. No eating, drinking, or smoking in the lab. You may not bring in anything consumable, either. Water bottles (or other drink containers) are not permitted in the lab.

13. Label all containers. Stock solutions must remain on the stock solution bench. Be sure to replace the same cap or stopper on the reagent bottles. Do not put medicine droppers or pipettes in the reagent bottles. Do not take too much stock solution. If you accidentally take more than you needed, do not return the excess back in the reagent bottle, try to give it to another student or dispose the excess as instructed. Grades may be reduced if instructions are not followed and materials are found where they should not be.

14. Unless otherwise stated, gloves must always be worn in the labs.

15. Make sure your sink is cleaned out before leaving the lab.

16. Beware of hot glass. It looks cool long before it may be handled safely.

17. Wash your hands at the end of lab even if you have been wearing gloves. This will prevent you carrying something out on your hands, which you later might get in your eyes or onto food.

18. Inform your lab instructor of any medical or physical needs.

19. If you are unsure on anything please ask your lab instructor or instructor.

20. During the molar volume of carbon dioxide experiment do not force the stopper into the rim of the flask. Gently push the stopper into the rim of the flask. If you put too much pressure on the stopper, while the flask is filled with water, the flask will shatter and can cause severe injuries.