

CHEM 1020: Introduction to Chemistry Laboratory Spring 2018

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Location: Science Building Room S.2600

Protocols:

- 1. Lab protocol documents include the experiment instructions, lab report sheets, and prelab questions.**
- 2. Download protocols at the website www.mctcteach.org/chemistry and print for free on campus. Under the Chemistry Course Links, click on "Intro. to Chemistry CHEM1020".**
- 3. Print and bring the protocol to each lab, read the materials, and come prepared.** A good idea is to get a folder or three-ring binder for lab only. Then print out all protocol papers at the start of term and simply bring that binder each week when you come to lab class.
- 4. If you do not bring the proper protocol for a given lab activity (e.g. forgot to print or left in car, at home, etc.) you will NOT be allowed to stay for that session and you cannot make up the lab at another time.** You cannot leave to print off the protocol and then come back - make every effort to print and read the protocol before lab starts.

LAB POLICIES

Safety:

1. **MANDATORY SAFETY SESSION:** You MUST attend the mandatory safety session scheduled during your registered lab section during the first week of the semester. Otherwise, you will not be allowed to carry out any lab experiments.
2. **GOGGLES:** Minnesota State Law requires that you wear safety goggles **at all times** in the laboratory when any type of experiments are being conducted by you or others around you. You are responsible for purchasing splash-proof safety goggles. Bring your goggles with you to lab every week. (If you forget your goggles, you may borrow a pair but 1 point will be deducted from your quiz score.)
3. **APPROPRIATE DRESS:** **Skin from neck down must always be covered and well protected. Shorts, open-toed shoes, leggings, and sleeve-less tops are NOT ALLOWED even on warm days!** Socks are required. Do not wear clothes with holes (for example, jeans or pants with holes). Eating, drinking, gum-chewing or applying any type of cosmetics in the lab is prohibited. Also make sure to tie up long hair or scarves to prevent them from catching fire.
4. **UNSAFE BEHAVIOR:** If an instructor finds that a student is not following the procedure in a safe manner or is unsafe to anyone in the lab, the instructor will ask that student to leave the lab and will receive a ZERO for that experiment. There will not be an opportunity to make up the experiment

Attendance/Withdraw:

 Lab attendance is strictly enforced and will be recorded by your lab instructor.

1. You need to be present in the lab for the entire 100 minutes of each lab session, unless you obtain permissions from your instructors. Unexcused leave during the lab will result in dismissal from that lab session which cannot be made up at a later time.
2. Full attention to the lab activities is required. No cell phones or any other electronics can be used unless they are approved by instructors for learning purposes.
3. If you are late by 10 minutes to a lab session, you will NOT be allowed to take the quiz.
4. If you are late by more than 10 minutes, you will NOT be allowed to do the experiment at all.
5. **If you do not participate in ANY lecture or lab activities for 14 calendar days, you will be administratively withdrawn from the entire course.** This includes not attending any lab or lecture, not turning in homework assignments, and not doing online quizzes etc. You will remain responsible for any financial liability and for any academic consequences due to this administrative withdrawal.
6. **If you miss a total of four or more lab sessions and remain registered in the course, you will get a grade of "zero" for the lab portion (20%) of the entire grade.**

Missing a Lab: If you have any unique situation that may prevent you from attending a lab (including a religious holiday), please consult with your lab instructor **as soon as possible and, at the latest, by the week before the lab session in question.**

- If you are unable to attend a scheduled lab, it may be possible for you to attend another lab session in the same week, as long as all three of the following requirements are met:
 1. **you make your request by the Friday before the week in question,**
 2. **there is space available in the lab session you hope to attend, and**
 3. **you obtain advance permission from both your lab instructor and the instructor of the lab session you hope to attend.**
- You will not be able to make up a missed lab session if you have not requested a permission to attend another session by the Friday prior.
- In order to address last minute emergencies or illnesses that cause you to miss a lab session, your lowest lab quiz and lab report are dropped from your final grade calculation. If a second lab is missed, a grade of zero will be given to that lab.

Note: Since each student can drop **only one lab** without significantly affecting his/her grade, don't use this opportunity unless it is absolutely necessary.

Academic Dishonesty: Violations "including, but not limited to cheating, plagiarism, or knowingly furnishing false information to the college" (Student Code of Conduct), are strictly prohibited. Although students are encouraged to discuss laboratory procedures with each other in the lab, it is expected that each student will perform his/her own work, including **the writing of their lab reports in their own words.** Identical reports may indicate copying and both reports will receive a grade of zero for that experiment.

LABORATORY PROCEDURES AND GRADING SCHEME

Grading Scheme: Each lab is worth 20 points: 10 points for the lab report and 10 points for the quiz. At the end of the semester, both the lowest lab score and the lowest quiz score will be dropped in your final lab grade calculation. The total points will constitute 20% of the grade for this course, assigned to the lecture section in which you are registered. Laboratory is considered an essential part of this chemistry course. Therefore, if you miss **four or more** laboratory sessions, you will get a "zero" for the lab portion (20%) of the overall course grade (see "Attendance/Withdraw" on the previous page).

Your Preparation: The labs generally come shortly after the same topics are covered in lectures, so make sure you understand the relevant basic principles from lecture.

- Read the experiment protocols and ask any instructors if you have questions.
- Go through the PowerPoint slides of the lab, available at the same website as the protocols, to visually learn about the apparatus, glassware, and important procedures.
- Complete the pre-lab exercise (part of the protocol) to prepare for the lab quizzes and lab reports since they often have similar questions. The answer keys to these exercises are also posted at the same website as the protocols.
- **YOU MUST bring the appropriate protocol for each lab, or you will not be allowed to do that experiment.**

Quizzes: A 10-question multiple choice quiz (one point per question, 10 points total) will be given only during the **first 10 minutes** of each laboratory period. This quiz will cover materials found in the protocol for that week. The quiz questions will mainly be about safety procedures, lab procedures, techniques, and concepts involved in the lab to be performed that week.

- **The quizzes are closed-book and any cheating will result in a “zero” for that quiz and no makeup will be provided.**
- **If you arrive late, you will not get extra time.**
- **If you are late by 10 minutes, you will not be given the quiz.**
- **If you are late by more than 10 minutes, you will not be allowed to do the experiment either. You will not be given a chance to make up the quiz OR the experiment at a different time.**

Data: All observations, measurements, and values recorded for an experiment are considered to be **data**. Record all data on the data-sheet **in ink**. If an error is made, cross it out with a **single line** and enter the correct data. **Using whiteout on the data sheet during or after lab is prohibited. Any data sheet with whiteout on it or written in pencil will be considered invalid and will not receive any points for the data collected.**

After finishing the lab, show all experimental data and products to the lab instructor and obtain his/her signature on your data sheet regardless of the experiment or whether you are attending your regularly scheduled lab or not. **Any data sheet without instructor’s initial is considered invalid and will not receive any points for that entire lab report.**

Clean up: Always dispose the chemicals according to the instructions. Rinse the used glassware with tap water. Put the empty glassware in the designated areas. Wipe your work and bench areas using a sponge before leaving the lab. Additional cleaning duty may be assigned by your instructor. **Those who don’t follow the clean-up procedure will be subject to 10% deduction in their lab report grades.**

Lab reports: The lab reports are composed of the data sheet and post-lab questions (both can be found in the protocols). After the lab period, finish the calculations on the data sheet and answer the post-lab questions in your own words. **Turn in the lab reports at the beginning of the next scheduled lab period that you attend to be eligible for full points.** If a student is absent from a lab, the lab report should be submitted at the lab session next attended.

For late lab reports, 1 point will be deducted from score for each day late, with up to 5 points deducted if submitted one week late. **No lab reports will be accepted if more than one lab session overdue. If you don’t turn in the lab report at all, you will get a “zero” for that experiment’s report.**

Tentative Lab Schedule

It is your responsibility to check the schedule before you start preparing for the lab for that week!!! Print out the lab protocols from the www.mctcteach.org/chemistry website.

Week	Dates	Experiments	Textbook Chapters
1	Jan. 8 – Jan. 12	Check-in & Safety Information	
2	Jan. 15 – Jan. 19	No Labs. Those who missed first week safety sessions MUST attend a make-up safety session (a limited number of make-up safety sessions will be offered; see instructors for details.)	
3	Jan. 22 – Jan. 26	Observations of Substances & Their Changes	Chapters 3 and 4
4	Jan. 29 – Feb. 2	No labs	
5	Feb. 5 – Feb. 9	Lewis Structures	Chapters 9 and 10
6	Feb. 12 – Feb. 16	Separation of Components of a Mixture	Chapters 3 and 4
7	Feb. 19 – Feb. 23	No labs	
8	Feb. 26 – Mar. 2	Ionic Precipitation Reactions	Chapter 7
	Mar. 5 – Mar. 9	Spring Break; No labs	
9	Mar. 12 – Mar. 16	Acid/Base Indicators	Chapters 7 and 14
10	Mar. 19 – Mar. 23	Measurements	Chapter 2
11	Mar. 26 – Mar. 30	No labs	
12	Apr. 2 – Apr. 6	Identification of a Liquid	Chapter 2
13	Apr. 9 – Apr. 13	Empirical Formula	Chapter 6
14	Apr. 16 – Apr. 20	Aspirin Synthesis	Chapter 8
15	Apr. 23 – Apr. 27	Buffers/Titrations; Complete Aspirin Expt.	Chapters 13 and 14
16	Apr. 30 – May 4	No Labs. All lab reports from the previous week need to be submitted to your lab instructor. Ask lab instructors for submission details. Absolutely no lab reports will be accepted after the deadline.	
17	May 7 – May 11	Final Exam Week; No Labs	

Additional Information

Science Club, Urban Farm Collective, and Three-Legged Frog Club

These clubs at MCTC provide opportunities for students to engage in co-curricular activities that greatly enhance learning experiences beyond the classroom. Although participation is optional and does not count towards your grades, you are strongly encouraged to take advantage of these resources. Watch for announcements and flyers for club events. Contact the club's advisor, the Student Life Office, or speak with your lab instructor for more information.

Student Club

Science Club

Urban Farm Collective

Three-Legged Frog Club

Club Advisor

Jasmine Erbs

Katherine Kragtorp

Cathy Geist

Associate Degree Programs: MCTC offers AS Degree programs in Chemistry and Biology. Courses in the programs transfer to four-year institutions and the University of Minnesota into various majors. **The program offers specialty courses such as Analytical Chemistry and Instrumentation, biochemistry lecture and lab, forensic science, and FDA regulatory affairs and quality control.**

Chemistry in Your Life (CHEM 1040): For students who want to take a science course to satisfy the requirements of Liberal Arts programs, the chemistry department offers "Chemistry in your Life" course. Satisfies goal areas 03 and 09.

Forensic Science (CHEM 1145): Forensic Science course for Liberal Arts majors and Science Majors. Satisfies goal areas 03 and 09. The course is offered in Fall and Spring semesters. You will learn the science of crime scene investigation and the criminal justice processes. You will participate in the student CSI Teams, collect mock crime scene evidence, be a scientist and analyze the evidence. You will participate in mock court-of-law trials and learn about expert witness testimony.

The Regulatory Affairs (CHEM 2320) in the chemistry program will be very useful for many majors, including biology, biotechnology, chemistry, health sciences, engineering, pharmacy, pre-med, pre-vet, sales, marketing, etc., and to pursue jobs and internships in clinical research settings, industry, academic and government labs.