Colorado State University

CHEM108: FUNDAMENTALS OF CHEMISTRY LAB

SPRING 2015 COURSE SYLLABUS

COURSE AND INSTRUCTOR INFORMATION

TA Name (for this section)	TA Email	TA Office Hours

In the space above, write down your TA's information for reference throughout the semester!

CHEM 108 is one of four lab courses in the general chemistry program at CSU. Each semester approximately 2000 students take one of these courses. This translates to more than 80 class sections taking place every week on the 4th floor of the Yates building. These lab sessions are facilitated entirely by a staff of 35-40 graduate teaching assistants. As such, the TA assigned to your specific section is your primary contact person for all aspects of the lab course.

If you encounter any problems or have questions during the semester about this course, you are encouraged to initially speak to your TA. If you feel the problem or question has not been addressed or you are uncomfortable talking with your TA, you may contact the general chemistry lab coordinator (Benjamin Reynolds) at benjamin.reynolds@colostate.edu.

The CHEM 108 lab course meets one day a week for 1 hour and 50 minutes per session. Outside of class, you will have pre- and post-lab assignments. Experience has shown that students who devote approximately 2-3 hours per week completing the lab assignments and seeking guidance from their lab TA during office hours will be more successful than students who do not spend this time.

A common habit for students in the lab course is waiting to complete pre- and post-lab assignments until just before they are due. This habit is highly discouraged and likely to result in less success in the course. These poor study habits often lead to 'sharing' or 'borrowing' information from others in the class in order to complete course assignments. ***Sharing, borrowing, or copying information from others in the class, even lab partners, is considered academic dishonesty and will result in grade penalties and notification of the incident to Conflict Resolution and Student Conduct Services (CRSCS).*** Full details on issues of academic integrity related to this course are included later in this syllabus.

The course syllabus details the policies for the general chemistry lab program as well as those for your particular lab course. If you have questions about the class, most answers are likely found in the syllabus. ***As a student enrolled in this course, it is your responsibility to read through these policies and make sure that you understand them before starting work in the class.*** In general, issues that arise will be handled in accordance with the policies outlined in this syllabus. Any other special circumstances or situations will be handled on a case-by-case basis.

Have a great semester!

COURSE DESCRIPTION

This course meets the All-University Core Curriculum (AUCC) requirements for Biological/Physical Sciences (Category 3A) and is approved under gtPathways in the content area of Natural and Physical Sciences with Lab (GT-SC1).

COURSE PREREQUISITES AND COREQUISITES

CHEM 107 Fundamentals of Chemistry (GT-SC2) or concurrent registration.

COURSE GOALS

To provide a hands-on laboratory experience that explores the experimental aspects of chemical principles such that a student will be able to apply those principles to analyze and explain chemical phenomena. At the conclusion of this course, a successful student should be able to…

- …understand the importance and role of experimentation in generating scientific knowledge.
- …recognize key laboratory safety principles and independently utilize those principles to maintain a safe lab working environment.
- …use standard laboratory equipment, computer-interfaced instrumentation, and classical chemical techniques to conduct experiments and analyze data.
- …use experimental evidence to construct scientific explanations and make conclusions and perform basic error analysis.
- …properly record experimental data and effectively communicate results of lab investigations using appropriate chemical symbolism and terminology.
- …recognize and apply principles of atomic/molecular theory, phases of matter, solutions, chemical reactions, and kinetics to experimental investigations.

COURSE ORGANIZATION AND PROCEDURES

This course is organized in a weekly format. The first week of the semester is dedicated to course introductions and lab safety. Twelve experiments will then be performed – one experiment per week. Pre- and post-lab assignments will be completed weekly.

CREDIT HOURS AND COURSE WORKLOAD

CHEM 108 lab is a one-credit course. Weekly experiments are expected to require 1-2 hours per week to complete. Assignments will be due each week and consist of data/participation and pre-/post-lab assignments associated with each experiment. It is expected that these assignments will take approximately 1-3 hours to complete. You should expect to spend approximately 3-5 hours each week completing this course.

NECESSARY COURSE MATERIALS

1. Fundamentals of Chemistry CHEM108 lab experiments – downloaded and printed directly from Canvas
2. Appropriate safety glasses (prescription glasses and sunglasses are unacceptable)
3. Scientific calculator (TI-30Xa or TI-30X IIS recommended, but not required)

YOU MUST DOWNLOAD AND PRINT A COPY OF THE LAB EXPERIMENT AND COMPLETE THE PRE-LAB ASSIGNMENT BEFORE EACH LAB SESSION.

SAFETY

You are required to adhere to all laboratory safety policies and procedures outlined in the handout CSU General Chemistry Laboratory Practices and Safety Policies. The first graded assignment for lab is to complete and turn in the Laboratory Safety Worksheet. You must also read, sign, and turn in the Laboratory Safety Agreement before your first lab experiment.

THE USE OF SAFETY GLASSES, DRESSING IN APPROPRIATE CLOTHING, AND WEARING PROPER FOOTWEAR ARE REQUIRED TO PARTICIPATE IN THE LAB.

OFFICE HOURS

All general chemistry lab TA's hold regular office hours at the Chemistry Learning Resource Center (CLeRC) in Yates 414. These office hours are open to students in any CSU general chemistry lecture or lab course. Office hour schedules will be posted in the CLeRC. Students directly enrolled in the course sections for an individual TA will have priority over walk-in students. Keep in mind that TAs not directly assigned to teach a particular course may not be as familiar with the topics or lab experiments but will still be able to provide guidance and/or direction about resources that are available to help you.

DROPPING OR WITHDRAWING FROM THE COURSE

The last day to drop this course with no restrictions is February 4th. Course withdrawal ('W') is allowed through March 23rd. After March 23rd, you will receive a letter grade on your transcript for this course.

INCOMPLETES

Incompletes are not given automatically in this course. You must contact the general chemistry lab coordinator (benjamin.reynolds@colostate.edu) to request an incomplete and you should have a passing grade and a justifiable reason for requesting an incomplete. CSU policy regarding a student receiving a grade of incomplete ("I") is covered in the CSU General Catalog (available online at catalog.colostate.edu). Incompletes are usually only given for extenuating circumstances and often require official documentation and/or interaction with student affairs and case management offices. If an incomplete is approved, you must sign an incomplete request form that outlines the conditions that must be met in order to fulfill the requirements of the incomplete and to receive a letter grade. If the requirements are not completed after one year, incomplete grades are automatically changed to a failing grade ("F").

GRADING

Individual letter grades for the course will be assigned based on the earned percentage of the maximum course points. The lowest lab experiment grade will be dropped. The specific grading structure is outlined in the table below.

Safety worksheet	50 pts
11 out of 12 Experiment Lab Reports (100 pts each, ***lowest score dropped***)	1100 pts
Total Possible Points:	**1150 pts**

Letter grades are guaranteed for the following earned percentage: 90% = A-, 80% = B-, 70% = C, 60% = D. For example, if you earn at least 80% of the points, your grade will be a B- or higher. Plus and minus designations will be appended to letter grades of A, B, and C at the end of the semester (however, a C- grade will not be used). These cutoffs will be exact with no rounding. A curve or sliding grade scale may be used as deemed appropriate to adjust for any variations in TA grading. Additional grade adjustments are also possible based on earning collaborative safety bonuses for your section (see below).

Scores for your individual assignments are maintained directly in the Canvas gradebook by your TA. You should check these grades regularly and verify that the scores entered into Canvas match the scores earned on assignments that have been handed back to you. ***Ask your TA to correct any Canvas entry mistakes as soon as you discover them or your final course letter grade will be affected.***

COLLABORATIVE BEHAVIOR AND SAFETY GRADE BONUSES

In keeping with CSU values, we strive to provide an opportunity and access to a safe chemistry lab experience. Safety starts with individual responsibility and each student in this course is expected to follow all safety policies and procedures.

Unfortunately, at times there are lapses in judgment or personal responsibility by some students which influences the safety of themselves and those around them. In the general chemistry labs, we feel that peer-policing is much more effective than having to engage in the futile battle of trying to 'catch' those that are violating safety policies. In fact, the quickest and most effective method of preventing accidents is to watch out for each other rather than to solely rely on the TA or prep room staff to 'enforce' safe lab behavior. Remember, the point of 'enforcing' safety is to protect and prevent physical harm while working in the lab room. ***Accordingly, every student taking the course is encouraged to politely intervene and stop any other student who they see committing a violation or creating an unsafe environment in the lab room.*** Peer intervention is a much faster and more effective way of preventing accidents in the chemistry labs and provides a means of watching out for your own safety and also the safety of those around you.

To encourage you to work with each other on these efforts, a collaborative safety bonus is possible in this course. ***For every four consecutive lab sessions in which experiments are performed and that an entire laboratory section has no safety penalties, the course section will earn a 1% safety bonus.*** The maximum

bonus that can be earned is 3%. The responsibility for earning this safety bonus is on every single student who is both individually responsible (by doing what you need to do regarding your own safety) and collectively responsible (by watching out for safety problems in other students around you). Safety bonuses will be applied to the course grade at the end of the semester.

Safety extends to proper housekeeping, waste management, and cleanup of the lab room. The ***entire class is collectively responsible*** for ensuring that all work areas, equipment/glassware and common areas (side benches, fume hoods, balances, and waste disposal areas) are thoroughly organized and cleaned at the end of every lab session. ***The collaborative safety bonus will be reduced by 1% point for each class session in which ANY portion of the lab room is not properly cleaned prior to leaving at the end of the lab session. Further, the bonus may also be reduced if the class has a significant problem following directions or adhering to common sense lab practices (i.e. not overfilling waste bottles).*** The decision to reduce the collaborative bonus is at the discretion of your TA and/or the general chemistry prep room staff. These reductions in the earned bonus may result in no bonus for the semester.

SAFETY GRADE PENALTIES

When peer intervention is not sufficient and safety violations are identified by the prep room or TA, penalties for violating the safety practices and procedures in the lab will be assessed based on the following policy:

1st violation:	***25 point deduction from total course grade***
2nd violation:	***50 point additional deduction from total course grade***
3rd violation:	***100 point additional deduction from total course grade***
4th violation:	***Permanent removal from lab for the semester and a failing course grade***

Your TA may enforce additional point penalties if you miss significant portions of a lab period in order to correct safety problems or for repeated reminders about following safety policies. For instance, if you are pulled from lab for inappropriate clothing and spend 1 hour of lab time going home to change your clothes, your TA may choose to deduct points or give you a zero for that lab based on the missed lab time. No makeup labs or alternative arrangements are allowed for labs missed due to failing to follow safety procedures. ***Do not expect to receive a warning before receiving a safety grade penalty.*** Safety penalties may be assessed by anyone responsible for the lab courses (TAs, prep room, faculty, etc). You are accountable for your own actions - do not expect others to make accommodations for an individual failure to adhere to safety policies.

LAB ATTENDANCE AND MAKEUP LABS

Attendance at lab is expected and required to complete the course. ***There are no open makeup lab sessions for the general chemistry lab courses. In addition, students are not allowed to copy the data from other students when lab has been missed.*** Instances of copying data from other students after an absence will be considered academic misconduct and handled accordingly.

NO LAB MAKEUPS OR ALTERNATIVE ACCOMMODATIONS ARE ALLOWED WITHOUT PRIOR APPROVAL FROM YOUR TA AND THE GENERAL CHEMISTRY LAB COORDINATOR. TURNING IN ASSIGNMENTS FOR LABS THAT YOU DID NOT ATTEND WILL BE CONSIDERED ACADEMIC MISCONDUCT.

If you miss or plan to miss a lab for any reason, you should notify your TA as soon as possible to discuss your options (if there are any options). ***For university-excused absences, you must provide written notification via email to either your TA or the lab coordinator about your absence and make appropriate arrangements no later than one week BEFORE the absence will occur.*** Official documentation to support the university absence must be provided by the date of the absence. Individual arrangements will be made to accommodate university-excused absences as long as advance arrangements are made no later than one week BEFORE the absence will occur.

Personal absences will be dealt with on a case-by-case basis. ***In the case of personal absences, you should notify your TA as soon as possible to discuss the reason for your absence. Some type of documentation noting the reason for your absence will be required to support your request.*** Documentation should be from a suitable authority and include the date of your absence. Some common examples of suitable sources of documentation include, but are not limited to, medical facilities, law enforcement/court, military orders, and funeral programs. Documentation should not disclose any personal information such as medical conditions. If you ask, most medical and legal offices have forms they can provide to document the date of your visit and potential missed school/work.

The possibility of making alternate arrangements will depend on a variety of factors including: the reason for your absence, the date of the missed lab experiment, and the timing of your notification. Early notification has the highest likelihood of a favorable response regarding alternate arrangements. ***Accommodations for personal reasons are not guaranteed nor should you expect them.***

IN MOST CASES, ASSIGNMENTS THAT ARE MISSED FOR PERSONAL ABSENCES WILL BE COUNTED AS THE DROPPED SCORE THAT IS BUILT INTO THE COURSE GRADING STRUCTURE.

DUE DATES AND LATE WORK

LAB WORK IS DUE AT THE BEGINNING OF THE LAB PERIOD. ASSIGNMENTS TURNED IN AFTER THE TA HAS STARTED LAB ARE CONSIDERED LATE. LATE ASSIGNMENTS WILL BE ACCEPTED UNTIL NOON THE NEXT DAY. LATE ASSIGNMENTS WILL INCUR AN AUTOMATIC 25% PENALTY/POINT DEDUCTION FROM THE MAXIMUM POINT VALUE OF THE ASSIGNMENT.
LATE WORK WILL NOT BE ACCEPTED BEYOND NOON ON THE DAY AFTER THE ORIGINAL DUE DATE.

Each TA uses their own discretion to determine the exact time that equates to the 'beginning of lab' so be sure you know your TA's policy and whether they provide any grace period. Not being present at the start of lab and then arriving late to lab is not an excuse for turning in late work. ***If you arrive late to class, expect that your assignment will be counted as late.***

Turning in late assignments outside of class - Late assignments that are turned in outside of your regular class meeting should be turned into the assignment drop box in the Chemistry Learning Resource Center (CLeRC) in Yates 414 unless you have made other individual arrangements with your section TA. If you turn in a late

assignment, you should notify your TA that you have turned in a late assignment to the dropbox. ***Assignments will be date stamped on the day they are received. If no date is documented on your assignment, it will be assumed that it was submitted at the date that your TA receives it and, therefore, will likely receive a zero grade for excessive lateness. Additionally, not notifying your TA when you turn in a late assignment will likely also result in a zero grade.***

ASSIGNMENT DETAILS

Lab assignments generally consist of a pre-lab assignment that must be completed prior to entering lab, in-class data/results and participation section, and a post-lab assignment. ***Your TA may include special instructions on formatting, organization, or additional content that must be included in your assignments. All instructions for completing assignments in the lab manual, in this syllabus, and any additional instructions provided by your TA must be followed to receive full credit on your assignments.***

Pre-lab Assignment:

Pre-lab assignments must be completed before each class and turned-in at the beginning of the lab session. Included in this assignment are questions based on safety and introductory concepts that will be the focus of the lab experiment.

Data/Results and Participation:

During lab, data is collected and written directly on the lab report form (printed handouts). A portion of the grade for each lab is based on your participation and the proper completion of the in-class report form. As you progress through an experiment, you should fill in the report form as instructed. If you have questions, do not hesitate to ask other students in the lab or your TA for help.

Post-Lab Assignment:

Post-lab assignments usually include some combination of data analysis, graphing, calculations, and further questions. Some of the questions will be directly related to the data collected and other questions may focus on applying the concepts of the lab to new, but related, situations.

ACADEMIC INTEGRITY

Academic integrity lies at the core of our common goal: to create an intellectually honest and rigorous community. Courses taught in the CSU Department of Chemistry, including this course, adhere to the CSU Academic Integrity Policies and Guiding Principles (http://catalog.colostate.edu) as found in the General Catalog and the Student Conduct Code (http://www.conflictresolution.colostate.edu/conduct-code). Academic dishonesty will not be tolerated in the general chemistry lab courses.

ACADEMIC MISCONDUCT IN THIS COURSE MAY INCLUDE, BUT IS NOT LIMITED TO, "DRY-LABBING" ANY EXPERIMENTAL LAB DATA/REPORT (REPORTING DATA AS YOURS WITHOUT BEING INVOLVED IN PERFORMING THE EXPERIMENT OR ACTUALLY COLLECTING THAT DATA), MISREPRESENTATION, FALSIFICATION, FABRICATION OF DATA, CHEATING ON A LAB EXAM, OR PLAGIARIZING/COPYING ANY PORTION OF THE LABORATORY REPORTS AND ASSIGNMENTS, OR REUSING DATA/ASSIGNMENTS FROM PRIOR SEMESTERS OR OTHER STUDENTS.

ANY ACTIONS THAT VIOLATE THESE POLICIES WILL RESULT IN GRADE PENALTIES AND REFERRAL OF THE CASE TO CONFLICT RESOLUTION AND STUDENT CONDUCT SERVICES

In this course, the most common instances of academic misconduct and cheating that occur include:

- ***Completing assignments with lab partners or others and turning in mostly identical answers***
- ***Being absent from lab and getting data from another student, lab partner, etc and turning in an assignment as if you had actually attended lab***
- ***Copying data and/or portions of assignments from prior semesters or another student***
- ***If retaking the course, reusing assignments from a prior semester***

Colorado State University has long upheld values of academic and scholastic integrity. The General Catalog's "Policies and Guiding Principles" asserts that CSU "expects students to maintain standards of personal integrity that are in harmony with the educational goals of the institution" - citing "principles of academic honesty" as the first example.

As a CSU student, it is your responsibility to understand and adhere to these policies and those in Article III of the Student Conduct Code regarding academic misconduct. If you choose to engage in academic misconduct, your actions will result in penalties that include failing the assignment and/or course and the incident being reported to the office of Conflict Resolution and Student Conduct Services (CRSCS) for further review. We may seek the maximum penalty for students found guilty of academic misconduct.
Further information about Academic Integrity is available at CSU's Practicing Academic Integrity website (http://learning.colostate.edu/integrity/index.cfm).

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

We are committed to the principles of universal learning. This means that our classroom, our virtual spaces, our practices, and our interactions be as inclusive as possible. Mutual respect, civility, and the ability to listen and observe others carefully are crucial to universal learning.

If you are a student who will need accommodations in this class, please contact your TA as soon as possible to discuss your individual needs. ***Accommodations for disabilities that are safe and reasonable for the chemistry lab environment will only be made after proper documentation has been received from Resources for Disabled Students (RDS). The appropriate RDS documentation and requests for accommodations must be done in a timely manner and should be at least one week in advance of when they are needed.***

RDS is located at 100 General Services Building on campus. Check online for RDS hours (http://www.rds.colostate.edu). If you need accommodations, such as alternative testing modes, copies of class notes, interpreters, and appropriate seating for seeing and hearing, you should obtain the appropriate RDS paperwork and give this information to your TA as soon as possible so the necessary accommodations can be made. Due to the laboratory environment, not all accommodations are possible. However, we will do our best to accommodate what is safe and reasonable. For lab courses with a practical exam, any arrangements for lab exam accommodations must be made at least one week before the scheduled exam.

HEALTHCARE AND COUNSELING SERVICES

CSU Health Network is staffed and equipped to provide healthcare and counseling services to meet most student needs. Healthcare services are available in the Hartshorn Building and counseling services are available in the Aylesworth Building. Services are available to you during each semester in which you have paid health fees as a part of your student registration (see website for exact dates). Further information is available online (http://health.colostate.edu).

CSU offers an optional health insurance plan for students at a reasonable cost. All students are encouraged to purchase this insurance unless you have other adequate health insurance coverage**.**

COURSE SCHEDULE

WEEK	DATE	EXPERIMENT
1	Jan 20 – 23	**MLK DAY - NO LABS ALL WEEK**
2	Jan 26 – 30	Introduction and Safety
3	Feb 2 – 6	Lab Experiment 1
4	Feb 9 – 13	Lab Experiment 2
5	Feb 16 – 20	Lab Experiment 3
6	Feb 23 – 27	Lab Experiment 4
7	Mar 2 – 6	Lab Experiment 5
8	Mar 9 – 13	Lab Experiment 6
9	Mar 16 – 20	**SPRING BREAK - NO LABS THIS WEEK**
10	Mar 23 – 27	Lab Experiment 7
11	Mar 30 – Apr 3	Lab Experiment 8
12	Apr 6 – 10	Lab Experiment 9
13	Apr 13 – 17	Lab Experiment 10
14	Apr 20 – 24	Lab Experiment 11
15	Apr 27 – May 1	Lab Experiment 12
16	May 4 – 8	**LAST WEEK OF CLASSES - NO LABS THIS WEEK**

While every effort is made to ensure that the policies outlined in this syllabus are appropriate and accurate, it is possible that unexpected events may arise that warrant modification to them. If such events occur, amendments will be announced on Canvas or by email. It is your responsibility to make sure that you stay informed of those changes, as the updated policies will be applied in the same way as those presented above.