CHE 115L: General Chemistry I Lab (1 Unit) – Spring 2023

Course Meeting Times, Location, and Instructor:

All Labs meet in James 235

A: Mon 12:00 PM – 2:45 PM; Ketenbrink
B: Mon 3:00 PM – 5:45 PM; Ketenbrink
C: Mon 6:00 PM – 8:45 PM; Haynes
D: Tue 2:00 PM – 4:45 PM; Harrell
E: Tue 5:30 PM – 8:15 PM; Diaz
F: Wed 3:00 PM – 5:45 PM; Bushelman
G: Thu 5:30 PM – 8:15 PM; Venable
H: Wed 12:00 PM – 2:45 PM; Schacht

Instructor: Brittany Ketenbrink
Office: James 248
E-mail: bketenbrink@calbaptist.edu
Office Hours: Mon: 10:00 AM – 12:00 PM (by appointment)
Mon: 6:00 PM – 8:30 PM
Tues: 10:30 AM – 2:00 PM (by appointment)

Additional Lab Instructors:

Dr. Schacht: pschacht@calbaptist.edu
Stacy Haynes: shaynes@calbaptist.edu
Kambria Harrell: kharrell@calbaptist.edu
Tara Bushelman: taral.bushelman@calbaptist.edu
Emma Venable: emman.venable@calbaptist.edu
Shana Diaz: shanamarie.diaz@calbaptist.edu

Purpose of the Course:

Laboratory experiments that are centered on the 'directed inquiry' method will be utilized in the lab component of this course. As opposed to 'cookbook' type labs in which detailed step-by-step directions are given, experiments performed in this course will require students to work in small groups (3-4 students) to develop a procedure to address a given problem. Groups will be assigned by your instructor and tasks will rotate between group members each week. Each group will submit a single lab proposal/report for each experiment and all group members will get the same grade on each submission. Because of the types of problems chosen, some labs will take 1 week to perform but many will take 2 weeks.

Course Description:

A laboratory experience designed to illustrate and reinforce topics covered in General Chemistry I and introduce students to laboratory practices, experiments and equipment that are foundational to the study of Chemistry. Additional lab fee.

Co-requisites: CHE 115

Required Textbook and Resources:

- Labflow Access Code (Can be purchased through the bookstore, additional information on how to register your code will be available through Blackboard)
- Scientific Calculator
- Composition Notebook
- Lab Coat

Course Objectives:

The goals for the laboratory are to give the student a firm foundation in the skills used in the General Chemistry laboratory. After completing the laboratory component of this course students should be able to:

1. Properly utilize a laboratory notebook to collect data in the laboratory setting.
2. Have a knowledge of safe conduct in the chemistry laboratory, including proper waste disposal, and how to respond in an emergency.
3. Design and perform experiments using common chemistry laboratory equipment including balances, graduated cylinders, pipets, burets, etc.
4. collect, manipulate, and analyze chemical data and be able to answer questions regarding the results of an experiment.
5. write laboratory reports in a professional manner.

Relationship of Course to University Student Outcomes

This course helps meet the following USO's and SLO's:
USO 3: Use critical thinking skills to demonstrate literacy: listening, speaking, writing, reading, viewing, and visual representing.
USO 4: Demonstrate competence in mathematical, scientific and technological skills.

Biology program:
•SLO #4: Students will demonstrate proficiency in accurately conveying scientific data both orally and in writing.
•SLO #5 Upon completion of each year of chemistry coursework (General and Organic), students will attain knowledge comparable to national standards in these areas of chemistry.

Biochemistry and Molecular Biology program:
•SLO #4: Students will demonstrate proficiency in accurately conveying scientific data both orally and in writing.
•SLO #5: Upon completion of each year of chemistry coursework (General, Organic, and Biochemistry), students will attain knowledge comparable to national standards in these areas of chemistry.
•SLO #8: Students will be able to apply instrumental and other laboratory techniques to laboratory-based problems.

Chemistry program:
•SLO #3: Students will demonstrate proficiency in accurately conveying scientific data both orally and in writing.
•SLO #4: Upon completion of each year of chemistry coursework (General, Organic, Analytical, and Physical), students will attain knowledge comparable to national standards in these areas of chemistry.
•SLO#6: Students will be able to apply instrumental and other laboratory techniques to laboratory-based problems.

Course Instructional Method:

Assignments and examinations serve two purposes: to improve and evaluate your understanding of chemistry. To that end, grading will be based on a combination of quizzes, proposals, reports, a lab notebook and a comprehensive final.

Course Information on Blackboard and LabFlow:

Course materials will be found and completed on LabFlow and Blackboard. Please check both on a regular basis. In addition, you are expected to check your CBU e-mail at least once every 24 hours during the work week (Mon-Fri).

Grading Policy:

Labs will be worth 30 points each. The exact point breakdown is listed below:

Pre-lab quiz	5 pts
Post-lab quiz	5 pts
Lab Proposal	5 pts
Lab Report	15pts

In addition to the lab points, your lab notebook will be collected twice throughout the semester and you will take a lab final during the last week of lab, which will complete your overall lab score.

Grade Assignments:

A	92.0-100.0 %	C+	77.0-79.9 %	D-	60.0-61.9 %
A-	90.0-91.9 %	C	72.0-76.9 %	F	<59.9 %
B+	87.0-89.9 %	C-	70.0-71.9 %		
B	82.0-86.9 %	D+	67.0-69.9 %		
B-	80.0-81.9 %	D	62.0-66.9 %		

Checking Grades

Be sure to check your grades often using the Blackboard grade book. I will do my best to input grades within 1 week of you turning in any assignment. It is your responsibility to inform me if there is a mistake BEFORE taking the final so that I can correct it. Any typos on blackboard that go uncorrected throughout the semester are ineligible for grade change requests after the final has been completed.

Lab Proposals: Lab proposals will be completed with your lab groups, and only one will need to be submitted for each group. They are worth 5 points each, and will be graded on the following criteria: list of equipment and reagents (with total quantities/amounts) needed, detailed step-by-step procedure/experimental design, list of variables to control, list of data to collect, details on how you will analyze data, safety considerations, and, how well the proposal address the problem given. Each Proposal will be due the day before each experiment is performed, by 12:00, noon. Lab proposals will be submitted electronically through Blackboard and will be graded electronically.

Lab Reports: 5 lab reports will be completed with your lab groups, with only one submission needed for each group. One lab report will be completed individually. They will be evaluated on the following components:

1. **Header**: Student name, partner's names, experiment number and title, and date
2. **Introduction**: One or two sentences stating objectives, goals, or purposes of the experiment
3. **Procedure**: A brief, but complete procedure for the experiment in your own words
4. **Results**: This will vary for each experiment, but ultimately will include the results of any tests
5. **Discussion**: A few paragraphs detailing an overview of the experiment and a discussion of the results, including a comparison of experimental and theoretical values, unexpected results or difficulties, evidence of experimental success or failure, and possible sources of error, etc.

6. **Neatness**: While there is no specific format for your reports, they should be typed in a neat and organized manner.

Lab reports will be due at the end of day (11:59 PM) six days following the completion of the lab. Lab reports will be submitted and graded electronically through Blackboard.

Quizzes: Quizzes will be given both before and after an experiment. All quizzes are individual assignments and will be taken and graded electronically through LabFlow.

Pre-lab quizzes will assess if you read the lab material *PRIOR* to coming to class. Pre-lab quizzes must be completed by the end of day (11:59 pm) the day before a proposal lecture in lab (these weeks are noted in the course schedule located on the last page). You will be required to score a 4/5 on your prelab quiz in order to be eligible to receive full points on your proposal assignment. You will have two opportunities to earn this score, however the *first* score you earn will be the one recorded in the grade book as your quiz grade.

Post-lab quizzes will assess your knowledge from the lab *AFTER* you have completed it. They will be due at the end of day (11:59 PM) one week after the completion of the lab. You will have one opportunity to take the post-lab quiz.

Exam: A lab final (an individual assignment) will be given at the end of the semester, and the lab notebook is the only information that you can look at during the lab final. In case you miss a lab period, it is your responsibility to consult your lab partners to gather and record missed information *prior* to the lab final. The lab final will comprehensively cover information from all of the experiments completed throughout the semester.

Lab Notebook: Each member of each lab group will also be expected to keep a laboratory notebook in which you will record a general outline of the lab that will be performed, data tables, observations, and calculations for each experiment you do. Everything in the lab, with the possible exception of large data sets recorded with a computer, should be hand-written in your lab manual (no photocopies or pasting of computer printed documents). This will be collected twice during the semester and graded for 10 points each time.

Safety: Also, per department policy, infractions of the safety rules will result in points being subtracted from your lab score. You will lose points for violating any guideline in the Student Safety Contract. This includes eating/drinking in lab, failure to wear personal protection equipment (goggles, lab coats, etc.) as required, wearing flip flops or inappropriate clothing, failure to follow directions, etc. Initial infractions will generally cost you 1-2 points each, but repeated infractions will bring larger penalties, and major infractions could result in dismissal from lab for the rest of the day and a zero on that day's lab experiment.

Late Policy: Late work will be penalized 10% per meeting. All work is submitted electronically, therefore an absence does not impair your ability to turn in an assignment. If you will be late or absent when an assignment is due, you are responsible for submitting the assignment by the time it is due in order to not lose any points. **NO** late work will be accepted after the lab final.

Attendance Policy:

As there are only 6 experiments throughout the semester, missing 2 labs during the semester will automatically reduce your grade to a maximum of a C, and missing 3 labs will result in an automatic fail.

- If you miss for an excused absence, and coordinate promptly with your lab instructor, it is likely you will be able to make up the lab, in which case it would not count as an absence.
- Exceptions may also be made for prolonged, documented emergencies or illnesses. These will be handled on a case-by-case basis. Your progress in the course prior to the long absence will be taken into account when deciding how to address the situation.

Since much of the lab experimentation will be done in a group setting, you are expected to attend class in person. However, you should not attend class if you have a frequent cough, fever, difficulty breathing, chills, muscle pain, headache, sore throat, recent loss of taste or smell, or if you or someone you have been exposed to someone who has been diagnosed with COVID-19.

Academic Integrity:

Discussion of assignments with other students is generally encouraged, unless specifically prohibited by the instructor. All work submitted by grading, however, must be your own. Any evidence of plagiarism, academic dishonesty, or other violations of the CBU Honor Code may constitute grounds for a failing grade in the course. Any act of academic dishonesty will result in a minimum penalty of a grade of "F" on the related item. For further guidance, please refer to the CBU Student Handbook for the CBU Honor Code.

Academic Environment:

If you must leave class early (e.g., you are on a team or involved with a campus group that is leaving campus before class is over), please let me know at the beginning of class. Also, please refrain from leaving class early except for the above-mentioned circumstances or for emergencies, because this can be quite distracting.

If you have a documented learning disability or other disability you may be eligible for certain special accommodations. Please see the Director of Disability Services office in the Academic Success Center for more information.

Recording Policy:

Recording of class sessions without the prior express written permission of the instructor is prohibited. Any permission granted shall include the requirements that a recording may only be used for content study purposes only and sharing a recording with anyone outside of the course and/or posting on social media are strictly prohibited. This course policy is in alignment with Student Handbook and the Standard of Student Conduct. Refer to Student Handbook policies 15.6, 15.7, and 15.8 for more information.

CHE 115: General Chemistry I
Tentative Schedule of Lab – Spring 2023
(Subject to Revision)

Week	Date	Experiment
1	**Jan 9 - 13**	**NO LABS THIS WEEK**
2	**Jan 16 - 20**	**NO LABS THIS WEEK** MLK DAY 1/16
3	Jan 23 - 27	GROUP 1 Check-in Lab Orientation Lab Safety Overview Lab 1 Proposal: Catching a Check Bouncer Lab 2 Proposal: Efficacy of Sunscreen Using UV-Sensitive Beads
4	Jan 30 – Feb 3	GROUP 2 Check-in Lab Orientation Lab Safety Overview Lab 1 Proposal: Catching a Check Bouncer Lab 2 Proposal: Efficacy of Sunscreen Using UV-Sensitive Beads
5	Feb 6 – 10	GROUP 1 Lab 3 Proposal: Missing Labels
6	Feb 13 - 17	GROUP 2 Lab 3 Experiment: Missing Labels
7	Feb 20 - 24	GROUP 1 Lab 4 Proposal: So Bland! *Initial lab notebook due in lab*
8	Feb 27 –Mar 3	GROUP 2 Lab 4 Proposal: So Bland! *Initial lab notebook due in lab*
9	**Mar 6 - 10**	**SPRING BREAK – NO LAB MEETINGS**
10	Mar 13 - 17	GROUP 1 Lab 5 Proposal: Alum from Aluminum – Worth it?
11	Mar 20 - 24	GROUP 2 Lab 5 Experiment: Alum from Aluminum – Worth it?
12	Mar 27 – 31	GROUP 1 Lab 6 Proposal: Alien Planet ATX78757 **LAB FINAL, Checkout**
13	Apr 3 – 7	GROUP 2 Lab 6 Experiment: Alien Planet ATX78757 **LAB FINAL, Checkout**
14	Apr 10 - 14	EASTER OBSERVANCE (4/10) NO LABS THIS WEEK
15	Apr 18 - 22	FINALS WEEK (NO LABS THIS WEEK)