

# Brazosport College

## Syllabus for CHEM 1111 – General Chemistry I Laboratory

**Instructor:** Claire Conboy

**Phone:** N/A

**Alt. Phone:** 979-230-3618

**Office:** N/A

**Email:** [claire.conboy@brazosport.edu](mailto:claire.conboy@brazosport.edu)

### I. COURSE DESCRIPTION

**CHEM 1111 - General Chemistry I Laboratory. CIP 4005015203**

Credit in CHEM 1311 as a laboratory science is contingent upon successful completion of CHEM 1111. **Credit Hours:** 1 (0 lecture, 3 lab)

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Dr. Judy Chu

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Dr. Lowery Kirby

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Gary Hicks

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Jeff Detrick

January 2021

- A. Prerequisite:** Grade of “C” or better in high school chemistry or grade of “C” or better in CHEM 1105. Successful completion of, or concurrent enrollment in CHEM 1311.  
**Required skill level:** College-level reading, writing and math.

## **II. COURSE OBJECTIVES**

The course is designed to help the student:

### **SAFETY**

We will do experiments safely or we will not do them

1. Wear splash proof goggles or glasses at all times
2. Know the exact location and operation of all safety equipment.
3. Never work alone in the lab.
4. Do only the experiment assigned by your lab instructor.
5. Wear clothing that will provide the maximum possible protection.
6. Place such things as purses, backpacks, sweaters, coats, scarves, and extra books in designated areas.
7. Never eat, drink, smoke, chew, or apply lipstick in the laboratory.
8. Dispose of waste materials according to the directions of your laboratory instructor.
9. Help keep the laboratory clean at all times.
10. Use a fume hood when directed to do so.
11. Use good judgment and care when working in the lab.
12. Avoid touching hot objects.
13. Read the labels on reagent bottle before using them.
14. Wash your hands thoroughly before leaving the lab

**Immediately report all physical and chemical injuries to your laboratory instructor, no matter how minor.**

## **III. STUDENT LEARNING OUTCOMES**

1. Demonstrate safe and proper handling of laboratory equipment and chemicals
2. Use basic apparatus and apply experimental methodologies used in chemistry laboratory
3. Conduct basic laboratory experiments with proper laboratory techniques.
4. Make careful and accurate experimental observations.
5. Relate physical observations and measurements to theoretical principles.
6. Interpret laboratory results and experimental data and reach logical conclusions.
7. Record experimental work completely and accurately in laboratory notebooks and reports.
8. Design fundamental experiments involving principles of chemistry.
9. Identify appropriate sources of information for conducting laboratory experiments involving principles of chemistry.

## **IV. TEXTBOOK OR COURSE MATERIAL INFORMATION**

### **A. Textbook**

1. Signature Labs Series, CER, Cengage Learning Publisher, 2008.  
ISBN: 978-0-495-04141-2 (required)
2. Visorgogs or safety goggles, must meet ANSI Z87.1-1989 certification. (required)

Required course materials are available at the Brazosport College bookstore, on campus or online at <http://brazosport.edu/bookstore/home.html>. Students are not under any obligation to purchase a textbook from the college bookstore. The same textbook is/may also be available from an independent retailer, including an online retailer.

**For Distance Education Courses include the following:** Contact the Brazosport College Bookstore with a credit card for course materials. Phone: 979-230-3651. Fax: 979-230-3653. Email: [bookstore@brazosport.edu](mailto:bookstore@brazosport.edu) Website: <http://brazosport.edu/bookstore/home.html>

**Connecting To Supplemental Class Material:**

Access the course by going to: <https://online.brazosport.edu/d2l/login>

Follow the instructions in "[How to Access Desire2Learn](#)" to login to the course in Desire2Learn.

For help with login to Desire2Learn, email your problems to [helpdesk@brazosport.edu](mailto:helpdesk@brazosport.edu)

**B. Course Outline**

**This is a sample outline which may vary with individual instructors. It will also vary based on whether the course is a summer course or a fall/spring course. Students should contact their instructor for the outline of the course they are taking.**

Week	Experiment
1	No Lab
2	TECH 380 Lab Safety and Drawer Check in MISC 486 Dimensional Analysis
3	PROP 484 – Density
4	REAC 482 - Copper
5	ANAL 503 – Nine Bottles – Reactions – handout grids for knowns and unknowns
6	ANAL 503 – Nine Bottles – Reactions – handout grids for knowns and unknowns
7	ANAL 424 - NaOH standardization
8	ANAL 427 - Acid Content of Fruit Juices
9	No Lab - Spring Break
10	PROP 332 - Gas Law Constant R
11	PROP 481 – Molar Mass by Dumas Method
12	Specific Heat Determination - handout for experiment
13	THER 368 - Heat of Neutralization

Week	Experiment
14	PROP 500 – Molecular mass – Freezing Pt Depression
15	Clean – up

### **Important Semester Dates:**

Last Day to Withdraw from Classes– Check BC Academic Calendar at <http://catalog.brazosport.edu/index.php>

## **V. LAB REQUIREMENTS**

1. Visorgogs or safety goggles, must meet ANSI Z87.1-1989 certification. Students will:
  - attend every lab
  - show up prepared (text, notebook, pen, assignments completed) and on time.
  - seek help at the first sign of learning difficulties.
  - fully participate in the lab.
  - have contributed significantly to all assignments turned in for credit (no copying).
  - not cheat on any experiment

### **NO CELL PHONE USE IN THE LAB, EXCEPT FOR EMERGENCY**

## **VI. STUDENTS WITH DISABILITIES**

Brazosport College is committed to providing equal education opportunities to every student. BC offers services for individuals with special needs and capabilities including counseling, tutoring, equipment, and software to assist students with special needs. For student to receive any accommodation, documentation must be completed in the Office of Disability Services. Please contact Phil Robertson, Special Populations Counselor at 979-230-3236 for further information.

## **VII. TITLE IX STATEMENT**

Brazosport College faculty and staff are committed to supporting students and upholding the College District's non-discrimination policy. Under Title IX and Brazosport College's policy FFDA (Local), discrimination based on sex, gender, sexual orientation, gender identity, and gender expression is prohibited. If you experience an incident of discrimination, we encourage you to report it. While you may talk to a faculty or staff member at BC, please understand that they are "Responsible Employees" and must report what you tell them to college officials. You can also contact the Title IX Coordinators directly by using the contact information below. Additional information is found on the Sexual Misconduct webpage at [www.brazosport.edu/sexualmisconduct](http://www.brazosport.edu/sexualmisconduct).

## **VIII. ACADEMIC HONESTY**

Brazosport College assumes that students eligible to perform on the college level are familiar with the ordinary rules governing proper conduct including academic honesty. The principle of academic honesty is that all work presented by you is yours alone. Academic dishonesty including, but not limited to, cheating, plagiarism, and collusion shall be treated appropriately.

Academic dishonesty violates both the policies of this course and the Student Code of Conduct. In this class, any occurrence of academic dishonesty will be referred to the Dean of Student Services for prompt adjudication, and may, at a minimum, result in F, in this course. Sanctions may be imposed beyond your grade in this course by the Dean of Student Services. It is your responsibility to know and understand the student code of conduct with regard to scholastic honesty, as well as the consequences for a breach of conduct. If you cheat on an exam, you will receive an "F" for the class.

Please refer to the Brazosport College Student Guide for more information. This is available online at <http://brazosport.edu/students/for-students/student-services/>.

## **IX. ATTENDANCE AND WITHDRAWAL POLICIES**

Class attendance contributes to your final grade, but you must attend class to successfully complete the course. If you are unable to complete this course, you must complete and submit a withdrawal form with the registrar's office. If the student decides to drop out of the class, it is the responsibility of the student to initiate a withdrawal before the withdrawal deadline in order to get a "W" on their transcript. If this is not done the student will receive a grade based on test grades and class grades earned during their attendance and absence (i.e., zeros on all missed materials, exams, skills tests, and final exam). If you stop participating on-line and do not withdraw, you will receive a performance grade, usually an "F".

## **X. COURSE REQUIREMENTS AND GRADING POLICY**

### **A. Grading**

There are 10 graded experiments for the lab course. Each experiment counts 100 points toward the final average lab grade. If you will be absent during a lab, you can make up the lab by going to another 1111 lab session during the same week, or you can make up the lab during make-up week (see schedule). You must turn in your lab write ups (pre-lab, data sheet and post-lab) to the lab instructor during your make-up lab. The lab instructor will forward your lab write ups to me. Missing more than 2 labs will constitute a grade of F for the course.

Attendance will be taken for each lab session. No lab write ups (pre-lab, data sheet or post-lab) will be accepted for any experiment not attended, unless the lab was made up with another lab instructor, or during make-up week.

### **A. Grading of the Laboratory Experiment**

1. The Pre-lab exercise (25 points) must be completed before the lab session. Student must turn in the pre-lab write up before commencing the experiment.
2. The Data Sheets and Observations (50 points) and the Post-lab exercises (25 points) will be due at the end of the period following the completion of the experiment.
3. The Data Sheets and Observations must be completely filled out in ink. When you make an error, cross it out with a single line. Do not use liquid paper or obliterate the ~~error~~. For example: eror error

Final Grades will be determined according to the following system:

Grade	Final Average
A	90-100
B	80-89
C	70-79
D	60-69
F	Below 60

#### **XI. STUDENT CONDUCT STATEMENT**

Students are expected to be aware of and follow the Brazosport College Student Code of Conduct. Students have violated the Code if they “fail to comply with any lawful directions, verbal or written, of any official at BC.” Lawful directions include precautions and requirements taken to prevent the spread of COVID-19 at Brazosport College. Students who do not follow safety requirements, including the wearing of a mask, may be removed from class by their instructor and referred to the Dean of Student Services.

#### **XII. CAMPUS CLOSURE STATEMENT**

Brazosport College is committed to the health and safety of all students, staff, and faculty and adheres to all federal and state guidelines. The College intends to stay open for the duration of the semester and provide access to classes and support services on campus in the safest way possible. The College will also comply with lawful orders given by applicable authorities, including the Governor of Texas, up to and including campus closure. It is possible that on campus activities may be moved online and/or postpone if such orders are given.

#### **XIII. STUDENT RESPONSIBILITIES**

Students are expected to fully participate in this course. The following criteria are intended to assist you in being successful in this course:

1. Understand the syllabus requirements
2. Use appropriate time management skills
3. Communicate with the instructor
4. Complete course work on time, and
5. Utilize online components (such as Desire2Learn) as required.

##### **A. Safety:**

1. Safety goggles must be worn at all times in the laboratory.
2. Know the locations of eyewashes, showers, fire extinguishers and exits.
3. Use common sense.
4. Never point the open end of a test tube at someone.
5. Bare feet are NOT allowed into the laboratory. Open sandals and shoes are discouraged.
6. All broken glass goes in the glass boxes located on the ledges above the benches.

**B. Laboratory Housekeeping:**

1. Arrange apparatus neatly and compactly. Keep all books except the laboratory manual off the laboratory workbench.
2. Do not throw filter paper or solid materials into the water troughs or sinks.
3. Keep all reagent bottles clean (especially acids and bases).
4. Keep the reagent-dispensing area clean. Pay particular attention to keeping the balances clean and in order. If you spill chemicals, clean them up immediately. Put caps back on reagent containers.
5. At the end of the laboratory period, clean off your workspace with a sponge or wet paper towel. Check to see that the gas and water have been turned off. You are responsible for keeping the area neat. Repeated failure to do so may result in loss of credit.

**C. Clean Up Starts 10 Minutes Before The Official End Of The Class Period.**

When the time is up, you are supposed to be out of the laboratory. Failure to properly budget your time is presumptive of poor planning and your grade may suffer.

**D. References:**

Occasionally reference data may be required on some of the compounds used in lab. Consult the CRC Handbook of Chemistry and Physics. A copy of the **CRC** can be found in the lab.

**XIV. OTHER STUDENT SERVICES INFORMATION**

Information about the Library is available at <http://brazosport.edu/students/for-students/places-services/library/about-the-library/> or by calling 979-230-3310.

For assistance with online courses, an open computer lab, online and make-up testing, audio/visual services, and study skills, visit Learning Services next to the Library, call 979-230-3253, or visit <http://brazosport.edu/students/for-students/places-services/learning-services/>

For drop-in math tutoring, the writing center, supplemental instruction and other tutoring including e-tutoring, visit the Student Success Center, call 979-230-3527, or visit <http://brazosport.edu/students/for-students/student-success-center/math-center/>

To contact the Physical Sciences and Process Technologies Department call 979-230-3618.

The Student Services provides assistance in the following:

Counseling and Advising	979-230-3040
Financial Aid	979-230-3294
Student Life	979-230-3355

To reach the Information Technology Department for computer, email, or other technical assistance call the Helpdesk at 979-230-3266.



Get the information you need – when you need it. Click <http://geni.us/BRAZO> to install **BC Connect** on your mobile device to receive reminders, explore careers, map your educational plan, be in the know about events, find out about scholarships, achieve your goals and much more.



## Working With Your Lab Partner

Lab Partner's Name \_\_\_\_\_

Best way to contact (phone, email) \_\_\_\_\_

To become a productive lab partner, develop and fine-tune the following skills and abilities:

1. **RESPONSIBILITY.** Before leaving the lab, make sure both you and your lab partner have completely filled out both you and your partner's data sheets. This is your insurance policy.
2. **LISTENING SKILLS.** You must be able to put your own thoughts aside and listen without interrupting or interpreting what your partner is saying. Try it - it's not easy.
3. **SELF-CONFIDENCE.** You must believe in yourself and in the worth of your contributions. Speak up!
4. **OPEN-MINDEDNESS.** Welcome change and listen to the ideas others bring.
5. **CREATIVITY.** Try stretching yourself outside of your routines. Try a different method. It might work better than your current method.
6. **THOUGHT.** Keep your goal in sight. Instead of following the lab manual like a recipe, consider the instructions to be a guide. When you make an error, how can you adapt the manual's procedure to still reach your goal? Which type of balance will give you enough significant digits?
7. **RELIABILITY.** Do what you say you're going to do.
8. **OBJECTIVITY.** Assess ideas, thoughts, and opinions from all sides, not just yours.
9. **OPTIMISM.** Look at problems as opportunities. Knocking over the beaker containing your product can lead to learning about purification techniques.
10. **COOPERATION.** You must be able to accept team decisions and work just as hard on other people's ideas as you do on your own.

Adapted from Ern, B. L. and Lawley, C. M. (1992). The office professional as a team player. Office Hours, 229, 1.