

# **Brazosport College**

## **Syllabus for CHEM 2123 - Organic Chemistry I Laboratory**

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### **I. COURSE DESCRIPTION**

**CHEM 2123 - Organic Chemistry I Laboratory. CIP 4005045203**

Credit in CHEM 2323 as a laboratory science is contingent upon successful completion of CHEM 2123. **Credit Hours: 1** (0 lecture, 3 lab)

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Dr. Judy Chu

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Dr. Kirby Lowery

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Gary Hicks

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Jeff Detrick

August 2021

- A. Prerequisite:** Grade of “C” or better in CHEM 1112 and successful completion of, or concurrent enrollment in CHEM 2323.

**Required skill level:** College-level reading, writing and math.

## II. COURSE OBJECTIVES

Given the proper laboratory equipment and reagents, the student will:

1. Determine the melting points of pure compounds and mixtures of variable composition and draw a melting point curve for the mixtures.
2. Demonstrate the purification of a solid by recrystallization. Sufficient purity is shown by a melting point range not exceeding 2°C.
3. Separate a mixture of an organic acid, and a neutral compound by successive basic and neutral extractions.
4. Demonstrate the purification of a liquid by simple and fractional distillation and determine its approximate composition from the distillation graph. Determine the purity of the various cuts by refractive index.
5. Separate camphor from B-carotene by sublimation. Determine the purity by melting point and UV-Vis spectroscopy
6. Isolate Clove Oil from Cloves Using Steam Distillation. Characterize the product via infrared spectroscopy.
7. Synthesize an alkene from an alcohol by the dehydration mechanism and purify the product. Yield should be greater than 60%.
8. Perform an electrophilic addition reaction on an alkene and purify the product. Yield should be greater than 60%.
9. Separate a Mixture of esters by Gas Chromatography. Determine the composition of an unknown mixture.
10. Nucleophilic substitution, factors effecting the rate and synthesis of 1-bromobutane.

## III. TEXTBOOK OR COURSE MATERIAL INFORMATION

### A. Textbook

1. Signature Lab Series, CER 2008, Cengage Learning Publisher.  
ISBN: 978-0-53414122-6 (required)
2. Visorgogs safety goggles, ISBN:803254 (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>.

## 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	Safety
3	T-701 Melting Points of Compounds and Mixtures
4	T-703 Purifying Acetanilide by Recrystallization
5	T-704 Separation of Cyclohexane and Toluene by Distillation
6	T-705 Separation of Acids and Neutrals by Extraction
7	T-722 Isolating Clove Oil from Cloves Using Steam Distillation
8	Column Chromatography
9	R-712 Dehydrating Cyclohexanol
10	S-719 Brominating Alkenes
11	Spectroscopy
12	Literature Lab

### **Important Semester Dates:**

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

**Office Hours:** See Faculty Schedule (last page)

## **IV. LAB REQUIREMENTS**

### **NO CELL PHONE USE IN THE LAB EXCEPT FOR EMERGENCIES**

Experiment lab reports are due at the first of the lab one week from completion of the experiment. All lab reports will be completed in the standard report format plus pre-and post-lab questions if required. There will be on lab make-ups. Missed labs will receive a zero grade.

## **A. SAFETY**

**We will do the experiment safely or we will not do it.**

- 1. Wear safety goggles at all times.**
- 2. Wear proper clothing.**
- 3. Use good housekeeping practices**
- 4. Do only authorized experiments**
- 5. Treat laboratory reagents as if they are poisonous or corrosive.**
- 6. Dispense reagents carefully. Dispose of laboratory reagents as directed.**
- 7. Do not eat, drink, use tobacco, or apply cosmetics in the lab.**
- 8. Report all incidents to the lab instructor no matter how minor.**
- 9. Be familiar with the location and use of all safety equipment.**
- 10. Become familiar with each lab assignment before coming to lab.**
- 11. Anticipate the common hazards that may be encountered in the lab.**
- 12. Become familiar with actions to be taken in the event of incidents in the lab.**

## **V. 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.

## **VI. 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)

## **VII. 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. Please refer to the Brazosport College Student Guide for more information. 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/>

## VIII. 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).

## IX. COURSE REQUIREMENTS AND GRADING POLICY

### A. Grading

Each experiment will have a grade of 0 to 100

Course grade = Total experiment grade / # of experiments.

Grades are assigned as follows:

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

### B. There Will Be No Make-Up Exams.

## X. 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.

## XI. COVID-19 STATEMENT

At Brazosport College, all of us, including faculty, staff and students, share a common goal this fall semester, to keep our classes running in the safest manner possible and avoid any disruption to your progress in achieving your educational and career goals. To that end, we ask and encourage you to conduct yourself in the following manner while on campus this semester:

- Every day, perform a self-health check prior to coming to campus and stay home if sick.
- To the greatest extent possible, maintain your distance between you and other students, faculty, and staff while on campus.

- Wear a properly fitted face covering over your mouth and nose while indoors on campus. If you do not have a mask, they will be available to you in all classrooms this fall.
- Practice good hygiene, washing your hands regularly and/or using hand sanitizer.
- The most effective way to protect yourself from Covid-19 is through vaccination. The vaccine is readily available and at no cost to you. Vaccine information and availability can be found at <https://brazosport.edu/coronavirus/vaccine/>.

If at any time this semester you begin to experience Covid symptoms, or if you are exposed to someone who has tested positive for Covid-19, please take the following steps:

- Stay home if you're feeling sick and minimize your contact with others.
- Alert the College by completing the Covid-19 Exposure Report Form online at <https://brazosport.edu/coronavirus/report/>. Be sure to provide accurate contact information, including a working phone number that you will answer.
- After submitting the report, you will be promptly contacted by a member of our Rapid Response Team, who will ask you some specific questions about your situation and provide you with guidance moving forward.
- If it is determined that you should not come to class, your instructor will be notified. **Please know that your instructor will consider course adjustments and potential make-up work only if your case has been reported to Brazosport College, and they've been notified by our response team.** Your instructor will work with you to determine how to manage any make-up work.

The Community Health Network (CHN) Clinic at Brazosport College (located in BC Central B-Wing) is scheduled to be open from 8 AM to 6 PM Tuesday through Thursday during the Fall 2021 semester. While walk-ins are available, your visit will be easier if you pre-register by creating an account at [www.mychn.org](http://www.mychn.org). In addition to providing health and behavioral services, CHN also provides COVID vaccinations and testing. All insurance is accepted, and healthcare is provided on a sliding scale including no cost for those who need it.

Throughout the semester, please regularly check the College's Covid-19 information page at <https://brazosport.edu/coronavirus/>, where the latest updates and guidelines will be posted. As members of the BC community, all of us share a responsibility to each other to be as safe as possible.

## **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.

### 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.

**SEMESTER: FALL 2021**

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WEDNESDAY				
Start	End	Class/Location	Room	Hrs
9:00 AM	10:00 AM	OFFICE	HS.212L	1.00
10:00 AM	11:15 AM	CHEM 1311.85	HS. 210	1.25
11:15 AM	1:00 PM	OFFICE	HS.212L	1.75
1:00 PM	4:00 PM	CHEM 1111.06	HS. 205	3.00
4:00 PM	5:30 PM	OFFICE	HS.212I	1.50
5:30 PM	7:30 PM	CHEM 2123.51	HS. 201	2.00
7:45 PM	9:30 PM	CHEM 2123.52	HS.201	1.75

12.25

FRIDAY				Hrs
Start	End	Class/Location	Room	
8:00 AM	10:00 AM	PHYSICAL ACTIVITY	GYM	
				2.00

<b>THURSDAY</b>				<b>Hrs</b>
<b>Start</b>	<b>End</b>	<b>Class/Location</b>	<b>Room</b>	
8:30 AM	9:45 AM	CHEM 1311.86	HS.210	1.25
9:45 AM	1:45 PM	OFFICE	HS.212L	4.00

**5.25**

TOTAL HOURS  
35.00

**OTHER OFFICE HOURS AVAILABLE  
BY APPOINTMENT**