Brazosport College

Syllabus for CHEM 1311 - General Chemistry I (With Honor's Option)

Instructor: Dr. Judy Chu Phone: 979-230-3435	Office: HS.212D Email: judy.chu@brazosport.edu
Alt. Phone: 979-230-3618	
I. COURSE DESCRIPTION	

CHEM 1311 - General Chemistry I. CIP 4005015203

A review and extension of basic principles of chemistry, together with a study of the elements and their compounds, bonding theories, kinetic molecular theory, solutions, and acid-base theories. **Credit Hours:** 3 (3 lecture, 0 lab)

Dr. Judy Chu	Dr. Kirby Lowery
Gary Hicks	Jeff Detrick

A. Prerequisite: Grade of "C" or better in high school chemistry or grade of "C" or better in CHEM 1305 or approval of the division chair.

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

II. COURSE OBJECTIVES

- 1. Learn basic terminology and the application of the mathematical skills required to interrelate numbers of atoms and molecules to mass and units of concentration.
- 2. Become familiar with the structure of the atom and its corresponding placement on the periodic table, as evidenced by the ability to predict various properties such as size, ionization potential, electronegativity, and electron affinity from the position of the element on the periodic table.
- 3. Write the electronic configuration of an atom and explain an element's reactivity in terms of its electronic configuration.
- 4. Be able to explain in writing both how and why various elements combine to form compounds. This should involve the interrelation of the fundamental concepts of bond theories covered in class into broader abstractions or principles.
- 5. Identify and recognize the limitations and differences among competing scientific models of chemical systems, such as covalent bonding and hybridization versus molecular orbital theory, and the various acid-base theories.
- 6. Gain a basic understanding of the behavior of elements and compounds in solutions and in chemical reactions.
- 7. Be able to predict the behavior and properties of molecules and ions in the gaseous, liquid, and solid states given a set of physical conditions.
- 8. Demonstrate knowledge of the physical and chemical properties of solutions of electrolytes and non-electrolytes.
- 9. Gain a background in chemical principles sufficient for success in more advanced courses such as Chemistry 1312 or Chemistry 2323.

III. STUDENT LEARNING OUTCOMES

- 1. Define the fundamental properties of matter, as well as classify matter, compounds, and chemical reactions.
- 2. Determine the basic nuclear and electronic structure of atoms.
- 3. Identify trends in chemical and physical properties of the elements using the Periodic Table
- 4. Describe the bonding and the shape of simple molecules and ions.
- 5. Solve stoichiometric problems.
- 6. Write chemical formulas; write and balance equations; use the rules of nomenclature to name chemical compounds; define the types and characteristics of chemical reactions.
- 7. Use the gas laws and basics of Kinetic Molecular Theory to solce gas problems.
- 8. Determine the role of energy in physical changes and chemical reactions.
- 9. Convert units of measure and demonstrate dimensional analysis skills.

IV. TEXTBOOK OR COURSE MATERIAL INFORMATION

A. Textbook

- 1. Chemistry W/Connect, 13th Ed., Chang, Publisher McGraw-Hill, 2019. ISBN: 978-1-26-0264852. (Dr. Chu sections, required)
- 2. Scientific Calculator T130XA (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. Website: http://brazosport.edu/bookstore/home.html

Connecting To Supplemental Class Material:

Access the course by going to: https://online.brazosport.edu/index.asp
For help with login to Desire2Learn, email your problems to 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	Date	Topic	Chap Unit	Homework
1	Aug. 30	Orientation, Classification of Matter, Physical and Chemical Properties	1.1 - 1.6	https://conn ect.mheduc
1	Sept. 1	Measurement, Scientific Notation, Significant Figs, Conversions	1.7 - 1.9	ation.com/c lass/j-chu-
2	Sept. 6	Labor Day Holiday		<u>chem13114</u>
2	Sept. 8	Atomic Theory, Periodic Table	2.1 - 2.4	1mw-
3	Sept. 13	Formulas, Nomenclature	2.5 - 2.7	<u>930-</u>
3	Sept. 15	Acids, hydrates, and exam review	2.7	<u>1045am</u>
	9/16-19	Exam 1 (chapters 1, 2) – online		
4	Sept. 20	Molar Mass, % Composition, Empirical Formula	3.1 - 3.6	1
4	Sept. 22	Chemical Equations, Reaction Stoichiometry	3.7 - 3.8	
5	Sept. 27	Limiting Reactant, Yields,	3.9 - 3.10	
5	Sept 29	Aqueous Soln's, Electrolytes, types of reactions, Oxidation No.	4.1 - 4.4	
6	Oct. 4	Redox Rxn's Types of Solutions, Concentration Units	4.4;12.1-3	
6	Oct. 6	Acid-Base Titrations; Effects on Solubility of T and P, Colligative Properties	4.5 4.7 12.4 -8	
7	Oct. 11	Exam 2 Review		
	10/14- 17	Exam 2 (chapters 3, 4, 12) – online		
7	Oct. 13	Gas Laws, Ideal Gas Equation	5.1 - 5.4	
8	Oct. 18	Stoichiometry, Mixtures, Kinetic-Molecular Theory	5.5 - 5.8	
8	Oct. 20	Types of Energy, Energy Changes in Chemical Reactions	6.1 - 6.3	
9	Oct. 25	ΔH Rxn, Formation, & Combustion	6.4 - 6.7	

9	Oct. 27	Exam 3 Review	
	10/28- 31	Exam 3 (chapters 5, 6) – online	
10	Nov. 1	Bohr Atom, Quantum Atom	7.1 - 7.5
10	Nov. 3	Electronic Configurations, Aufbau Principle	7.6 -7.9
11	Nov. 8	Periodic Properties	8.1 - 8.6
		Nov. 8 - Last Day to Withdraw	
11	Nov. 10	Ionic Bonding, Covalent Bonding	9.1 - 9.5
12	Nov. 15	Lewis Structures, Bond Energies	9.6 - 9.10
12	Nov. 17	VSEPR	10.1 - 10.2
13	Nov. 22	Valence Bond and MO Theory	10.3 - 10.8
13	Nov. 24	Thanksgiving Holiday	
14	Nov. 29	Exam 4 Review	
14	Dec. 1	Exam 4 (chapters 7, 8, 9, 10) – online	
15	Dec. 6	Final Exam Review	
15	Dec. 8	Final Exam Review – cont.	
16	Dec. 13	Final Exam – Mon., Dec. 13, 10:30 AM - 12:30 PM	

^{*}This schedule is subject to change.

Important Semester Dates:

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

Office Hours: By appointment, See Faculty Schedule (last page)

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

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 is not graded, 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 by Thursday, Nov. 8, 2021. If you stop attending class and do not withdraw, you will receive a performance grade, usually an "F".

IX. COURSE REQUIREMENTS AND GRADING POLICY

For this class you must complete the following:

Exams: There will be a total of four exams. Each exam will last approximately one hour during class. The exact date of each exam will be announced in class prior to the actual date of the exam.

Homework: You will be using "Connect" or "CourseSmart" for homework. The link to the homework website https://connect.mheducation.com/class/j-chu-chem131141---mw-930-1045am. You will need an access code to register for "Connect". The access code is bundled with your textbook if you bought the textbook from the BC bookstore. (http://www.brazosportbookstore.com/home).

If you bought a used textbook, you could purchase the access code at http://connect.customer.mheducation.com/students-how-to-order/.

Due date for homework is the day of the exam. For example, Exam 1 covers chapters 1 and 2; therefore, the due date for chapters 1 and 2 homework is the day of Exam 1.

Participation: Attendance, working problems in class.

Final Exam: The final will be given at the end of the course. The final exam is comprehensive. **SI Session:** Participation in Supplemental Instruction session to be held by the SI leader.

A. Grading

Each of the above requirements counts toward your final grade as follows:

Hourly Exams 60% Homework 15% Participation 5% Final Exam 20%

SI Session Attendance Up to 10 extra points toward final grade

Grades are assigned as follows:

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

B. Testing

The material to be covered on each exam is as follows:

<u>Exam</u>	<u>Chapters</u>
1	1 and 2
2	3 and 4 and 12
3	5 and 6
4	7, 8, 9, and 10
Final	Comprehensive Exam

C. Make-Up Policy

There will be no make-up exams. The final exam grade will replace <u>one</u> missed exam grade.

D. SUPPLEMENTAL INSTRUCTION (SI)

<u>Attendance</u> and <u>participation</u> of SI sessions will accumulate toward a maximum of 10 bonus credits toward the final grade for the semester. SI leader will handout SI session schedule.

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. 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. PROJECTS, ASSIGNMENTS, PORTFOLIOS, SERVICE LEARNING, INTERNSHIPS, ETC.

Optional Honor's Project for Honor's credit.

XIV. 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.

XV. 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/

To contact the Physical Sciences and Process Technology 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 Activities 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.

Using Desire2Learn for Introductory Chemistry (CHEM 1311/1111-online)

What you need:

- 1. Computer with internet connection as well as Browsers such as <u>Microsoft Edge</u>, <u>Google</u> Chrome, Firefox or Safari and updated Java loaded.
- 2. **Student ID** (**not Social Security Number**) and **PIN**. Go to <u>BC student account</u> for instructions about obtaining student accounts.
- 3. Sign up for BCNET password reset at BC password assistance

Log-on to Web Course

- 1. Open your internet browser on your computer
- Go to the Brazosport College online course home page https://online.brazosport.edu/index.asp
 (bookmark this page)



Check Your Computer Technical

Technical Support Chat

First Time Login Help

Distance Learning Website

FALL courses will be available for access on August 24th.

Brazosport College has been authorized to provide financial assistance to those students who have been negatively impacted by the COVID -19 pandemic. View Brazosport College's CARES Act COVID-19 Emergency Assistance website for more information on who is eligible and how to apply. If you are eligible to apply, log in with your Brazosport Username and password and click on the COVID-19 Emergency Assistance course to complete the CARES Act application (view Login Guide).

Brazosport College ha sido autorizado para proporcionar asistencia financiera a aquellos estudiantes que han sido afectados negativamente por la pandemia COVID-19. Consulte el sitio web de Asistencia de Emergencia COVID 19 de la Ley CARES de Brazosport College para obtener más información sobre quién es elegible y cómo solicitarlo. Si es elegible para aplicar, inicie sesión con su nombre de usuario y contraseña de Brazosport y haga clic en el curso de Asistencia de Emergencia COVID-19 para completar la solicitud de la Ley CARES (ver la Guía de inicio de sesión).

Classes are now offered online or through alternative formats until further notice. View the Coronavirus Guidance page for the most recent updates. To register for Summer and Fall classes, log into your MyBC.

If you are having technical issues, unable to log in or see your course: text chat with technical support, email helpdesk@brazosport.edu or call (979) 230-3266.

To login and access course(s): Enter your Brazosport Username and Password. If you forgot your password contact the helpdesk using the above contact information. If this is your first time here, view First Time Login Help.

It is highly suggested to view our Course Tools Tour video which shows how to use tools such as submitting a quiz, doing a discussion, turning in an assignment, and view grades. View video based on closed captioning preference: English Captioned Video / Spanish Captioned Video.

By logging into the Virtual Campus you agree to be bound by the terms of BC's Student Security Agreement. Furthermore, you agree to be bound by any subsequent revisions of this agreement.



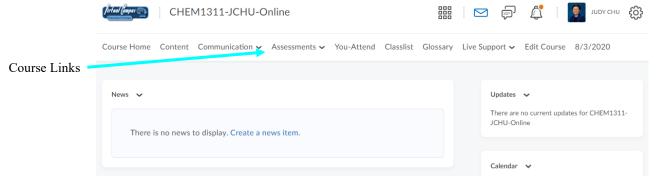


- 3. *Type* your **Username** and **password** in the boxes (see example below) **Username** is the same as students' BCNET ID and is as follows:

 The username for your student account consists of your first name initial, your whole last name and the last four digits of your student ID (example: jdoe1234). Your **Password** will be BC+your pin number (example: bc123456). You should have received a letter from the Registrar that provided you your Student ID number and your pin number. You may visit the Registrar Office to get this information in person.
- 4. You will now see the **My Courses** page that will display your name and show a link for the course. If you are taking more than one web course at Brazosport College you will see each course listed, *click* on the **blue title** of the course to enter.

Important notes about the My Web Courses entry page

Become familiar with quick links and icons once you are in the course:



- Click the Log Out button when you have completed your work in **Desire2Learn** or if you step away from your work for more than 15 minutes. Logging out will close the program but keep the browser open. Thousands of students now use these servers for online courses. Students who close the window (X) but do not log-out are still on the server and therefore take up resources slowing the process for everyone else. **Be a courteous user and always "Log-out"**
- The **Course Menu** is the blue navigation bar under the Brazosport College Virtual Campus logo. Most links for course material are located there.
- All email in **Desire2Learn** is for enrolled students only. You will not be able to send or receive messages from anyone who is not enrolled in this course. **Please communicate with me through this email**. In the event that D2L is not accessible, and you need to reach me you may send a message to my campus email address mailto:judy.chu@brazosport.edu, however, I will not respond as quickly as when messages are send through D2L.
- If you have any questions during the semester, please contact me as quickly as possible.



student registration information course CHEM 1311 - Fall 2021 with LearnSmart and LearnSmart Prep instructor Judy Chu section CHEM1311.41 - MW 9:30-10:45AM registration dates 08/30/21 - 12/13/21 online registration instructions Go to the following web address and click the "register now" button. https://connect.mheducation.com/class/j-chu-chem131141---mw-930-1045am This is a unique address for CHEM1311.41 - MW 9:30-10:45AM Having trouble registering? Get help here: https://bit.ly/StudentRegistration

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HONOR'S OPTION

An honors option is available for this course. To complete the honor's option, you will need contact the Honor's program director for approval. Afterwards, submit an honor's contract, and present an honor's project at the end of the semester.

1. **Topic** – The topic range is quite broad. The criterion is some aspect of chemistry as it relates to society, an average person's life. The topic should be narrow enough that it can be covered in at least some depth in a 10-minute presentation. Topic should be approved by the instructor.

2. Components -

- Bibliography A written list of references in some acceptable format.
- Outline Written, to be turned in along with the bibliography at least one week prior to the presentation.
- Presentation The presentation would be oral and may be supplemented by use of the whiteboard, flipcharts, transparencies, or PowerPoint. The presentation will be scheduled by the honor's director (Carrie Pritchett) before the end of the semester.

BRAZOSPORT COLLEGE FACULTY SCHEDULE

Format Email Address

INSTRUCTOR: Judy Chu

EMAIL: judy.chu@brazosport.edu

MONDAY				
Start	End	Class/Location	Room	Hrs
9:00 AM	9:30 AM	OFFICE	ONLINE	0.50
9:30 AM	10:45 AM	CHEM 1311.41	ONLINE	1.25
11:00 AM	12:15 PM	OFFICE	ONLINE	1.25
12:15 PM	1:00 PM	LUNCH		
1:00 PM	4:00 PM	CHEM 1111.81	HS.205	3.00
4:00 PM	6:00 PM	CHEM 1305.40	ONLINE	2.00
6:00 PM	8:00 PM	PHYSICAL ACTIVITY		2.00
				10.00

	WEDNESDAY			
Hrs	Room	Class/Location	End	Start
0.50	ONLINE	OFFICE	9:30 AM	9:00 AM
1.25	ONLINE	CHEM 1311.41	10:45 AM	9:30 AM
2.00	ONLINE	CHEM 1305.40	12:45 PM	10:45 AM
		LUNCH	1:00 PM	12:45 PM
2.00	ONLINE	CHEM 1105.42	3:00 PM	1:00 PM
2.75	ONLINE	CHEM 1105.40	5:45 PM	3:00 PM
_				
8.50				

	FRIDAY			
Start	End	Class/Location	Room	Hrs
	1			0.00

SEMESTER: FALL 2021

OFFICE: VIRTUAL

PHONE: <u>979-230-3435</u>

TUESDAY				
Start	End	Class/Location	Room	Hrs
9:00 AM	9:30 AM	OFFICE	ONLINE	0.50
9:30 AM	10:45 AM	CHEM 1305.41	ONLINE	1.25
10:45 AM	11:30 AM	CHEM 1305.40	ONLINE	0.75
11:30 AM	12:00 PM	LUNCH		
12:00 PM	1:00 PM	CHEM 1105.40	ONLINE	1.00
1:00 PM	3:00 PM	CHEM 1105.41	ONLINE	2.00
3:00 PM	5:30 PM	OFFICE	ONLINE	2.50

THURSDAY				
Start	End	Class/Location	Room	Hrs
9:00 AM	9:30 AM	OFFICE	ONLINE	0.50
9:30 AM	10:45 AM	CHEM 1305.41	ONLINE	1.25
10:45 AM	12:00 PM	OFFICE	ONLINE	1.25
12:00 PM	12:30 PM	LUNCH		
12:30 PM	4:00 PM	CHEM 1305.41	ONLINE	3.50
4:00 PM	5:00 PM	CHEM 1105.40	ONLINE	1.00
5:00 PM	6:00 PM	OFFICE	ONLINE	1.00
				8.50

OTHER OFFICE HOURS AVAILABLE BY APPOINTMENT

TOTAL HOURS 35.00

8.50