

Brazosport College

Syllabus for CHEM 1305 - Introductory Chemistry

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I. COURSE DESCRIPTION

CHEM 1305 - Introductory Chemistry. CIP 4005015103

A study of basic organic and inorganic chemistry with special emphasis placed on practical applications of chemistry. Designed for students with no previous background in chemistry.

Credit Hours: 3 (3 lecture, 0 lab)

August 2022

- A. Required skill level:** College-level reading and writing. College-level with corequisite (placement code 3).

II. COURSE OBJECTIVES

This course is designed to help the student:

A. Unit 1

- a. Learn the basic terms used to describe matter and energy.
- b. Understand the relationship of the masses of elements and compounds to the unit of measure, the mole.
- c. Understand the relationship of atomic structure to chemical properties.
- d. Predict the properties of element based on its position in the periodic table.

B. Unit 2

- a. Determine the names and formula of chemical compounds.
- b. Develop a good understanding for the relationship between percent by mass and the mole. Be able to convert from moles to grams and grams to moles.

C. Unit 3

- a. Write and balance chemical equations.
- b. Use the concept of stoichiometry to determine quantities of reactants needed and products formed in a chemical reaction.
- c. Identify the element oxidized, the element reduced and the oxidizing and reducing agents in a redox reaction.

D. Unit 4

- a. Obtain a basic understanding of the ideal gas law, i.e., the effect of pressure and temperature on volume.
- b. Understand the relationship between mass percent and molarity and how to convert from one to another. Also understand the dilution formula and how to use it.

E. Unit 5

- a. Distinguish between organic and inorganic compounds. Draw structural formulas and name the alkanes, alkenes, and alkynes. Distinguish between saturated, unsaturated, and cyclic hydrocarbons.
- b. Discuss the general formula, names, structure and uses of alcohols, ethers, aldehydes, ketones, carboxylic acids, and esters.
- c. Become familiar with monomers and polymers. Be exposed to polymer manufacturing and polymer evaluation technology.

III. STUDENT LEARNING OUTCOMES

At the completion of CHEM 1305 the student will be able to:

1. Use the periodic table to determine the chemical symbols of the elements, their electronic configurations, and to predict chemical formula.
2. Balance chemical equations.
3. Perform molar and mass quantity calculations given balanced chemical equations.

IV. TEXTBOOK OR COURSE MATERIAL INFORMATION

A. Textbook

1. Introductory Chemistry Mastering Chemistry, TRO, 6th Ed. Pearson Publisher 2018.
ISBN: 978-0134565620 (required)
2. Scientific Calculator (required); for example, TI-30XIIS.

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>

B. Course Outline- The outline is subject to change.

WEEK	Date	LECTURE MW 11:00AM-12:15PM	LAB (M 1:10-3 PM)
1	8/29	Chapter 1 – The Chemical World Chapter 2 – Measurement and Problem Solving	Intro; Tech 380 – Safety Practices
2	9/5	Labor Day Holiday (9/5) Chapter 2 – Measurement and Problem Solving	Holiday- No lab
3	9/12	Chapter 3 – Matter and Energy Exam 1 (Wednesday) Chapter 4 – Atoms and Elements	Exp 486 – Dimensional Analysis
4	9/19	Chapter 4 – Atoms and Elements Chapter 9 – Electrons in Atoms and the Periodic Table	Exp. 382 - Transfer
5	9/26	Chapter 10 – Chemical Bonding Review for Exam 2	Exp. 375 - Separation
6	10/03	Exam 2 (Monday) Chapters 5 – Molecules and Compounds	Exp. 375 - Separation (continued)
7	10/7	Chapters 5 – Molecules and Compounds Chapter 7 – Chemical Reactions	Exp. 399 - Chemical Change
8	10/14	Chapter 7 – Chemical Reactions Exam 3 (Wednesday)	Exp. 405 - Identify
9	10/21	Chapter 6 – Chemical Composition	Exp. 387 - % Water
10	10/28	Chapter 8 – Quantities in Chemical Reaction	Exp. 388 - Empirical Formula
	11/7	Last day to withdraw	Last Day to withdraw
11	11/7	Exam 4 (Monday) Chapters 13 – Solutions	Make-up Lab
12	11/14	Chapters 13 – Solutions Chapter 14 – Acids and Bases	Exp. 394 - Molar Concentration
13	11/21	Chapter 11 - Gases	Exp. 304 – Vinegar
14	11/25	Exam 5 (Monday) Thanksgiving Holiday (Wednesday)	No Lab (Thanksgiving)

15	12/5	Chapter 18 – Organic Chemistry (Monday) Final Exam Review (Wednesday)	Clean up
16	12/14	Final Exam – Wednesday, Dec. 14, 10:30AM -12:30 PM	No Lab final

WEEK	Date	LECTURE R 5:30-8PM	LAB (R 8:10-10 PM)
1	09/01	Chapter 1 – The Chemical World Chapter 2 – Measurement and Problem Solving	Intro; Tech 380 – Safety Practices
2	09/08	Labor Day Holiday (9/5) Chapter 2 – Measurement and Problem Solving	Exp 486 – Dimensional Analysis
3	09/15	Chapter 3 – Matter and Energy Exam 1 Chapter 4 – Atoms and Elements	Exp. 382 - Transfer
4	09/22	Chapter 4 – Atoms and Elements Chapter 9 – Electrons in Atoms and the Periodic Table	Exp. 375 - Separation
5	09/29	Chapter 10 – Chemical Bonding Review for Exam 2	Exp. 375 - Separation (continued)
6	10/06	Exam 2 Chapters 5 – Molecules and Compounds	Exp. 399 - Chemical Change
7	10/13	Chapters 5 – Molecules and Compounds Chapter 7 – Chemical Reactions	Exp. 405 - Identify
8	10/20	Chapter 7 – Chemical Reactions Exam 3	Exp. 387 - % Water
9	10/27	Chapter 6 – Chemical Composition	Exp. 388 - Empirical Formula
10	11/03	Chapter 8 – Quantities in Chemical Reaction	Make-up Lab
	11/07	Last day to withdraw	Last Day to withdraw
11	11/10	Exam 4 Chapters 13 – Solutions	Exp. 394 - Molar Concentration
12	11/17	Chapters 13 – Solutions Chapter 14 – Acids and Bases	Exp. 304 – Vinegar
13	11/24	Thanksgiving Holiday (Thursday)	No Lab (Thanksgiving)
14	12/01	Chapter 11 - Gases Exam 5 Chapter 18 – Organic Chemistry	Lecture
15	12/8	Final Exam (2hours) – Thursday, Dec. 8, 5:30-8PM	No Lab final
16	12/16	Grades due by	

Important Semester Dates:

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

Office Hours:

For fulltime faculty, office hours may change from semester to semester. Current faculty office hours are included on the syllabus, see link: <https://brazosport.edu/faculty-and-staff/resources/course-syllabi-instructor-information/>

For an adjunct faculty, no office hours are required, and they are not assigned an office. To set up an appointment with an adjunct, contact the instructor as per the email address on the syllabus, see link: <https://brazosport.edu/faculty-and-staff/resources/course-syllabi-instructor-information/>

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.

Alex Crouse, Director of Student Life and Title IX Coordinator
979-230-3355; alex.crouse@brazosport.edu

Mareille Rolon, HR Coordinator and Deputy Title IX Coordinator
979-230-3303; mareille.rolon@brazosport.edu

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.

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,
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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 participation 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 you decide to drop out of the class, it is your responsibility to withdraw before the deadline in order to get a "W" on their transcript. If this is not done you will receive a final grade based on test grades and class grades earned during your attendance and absence (i.e., zeros on all missed assignments for homework, exams, and final exam). 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 five 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.

Notes: One to two pages summarizing each chapter pre-lecture reading assignments can count up to six bonus points on each exam. Notes include definitions, examples from everyday life, drawings/sketches, formulae/equations, methods to solve problems can be shown to the professor on the first day we discuss each chapter.

Homework: You will be using [MasteringChemistry](#), an online tutorial and homework program that accompanies your textbook. Due date for homework is the day of the exam. For example, Exam 1 covers chapters 1-3; therefore, homework for chapters 1, 2, and 3 is due on the day of Exam 1.

Participation: Attendance, working problems in class, and **no cell phone use in class.**

Final Exam: The final will be given at the end of the course. The final exam is comprehensive.

A. Grading

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

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

Grades are assigned as follows:

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

B. Testing

See the class calendar for the chapters and dates of the tests. Students are allowed to bring the exam: one page of handwritten notes, containing equations, etc., and a calculator (scientific or graphing). **Smart phones are not permitted during exams!!**

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

<u>Exam</u>	<u>Chapters</u>
1	1 - 3
2	4, 9, 10
3	5 & 7
4	6 & 8
5	13, 14, & 11
Final	Comprehensive Exam (all chapters from Exams 1-5 and chapter 18)

C. Make-Up Policy

There will be no make-up exams. The lowest exam grade will be dropped. The final exam grade will replace **one** missed exam grade.

D. Supplemental Instruction (SI)

Attendance and participation 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. 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.

XII. 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.

XIII. 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 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.