



SYLLABUS

CHEMISTRY 1405.221CL

INTRODUCTORY CHEMISTRY-I

Spring 2024

6:00 – 8:50 pm Tuesdays and Thursdays

Prepared by

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Professor of Chemistry

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**COLLEGE OF THE MAINLAND
TEXAS CITY, TEXAS-77591**



Instructor Information:

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Office Hours: Tuesdays and Thursdays 8:50-9:20 PM

Location: Room 346 STEAM Building.

Required Textbook: Online Textbook "Chemistry for Changing Times" (Hill and McCreary). The link to this e-book is: <http://chem.libretexts.org>. This e-book is offered at no extra cost to the students. In order to open the e-book for this class, follow the instructions below:

1. Go to the website: <http://chem.libretexts.org>
2. Open the tab titled: "Bookshelves".
3. Click on "Introductory, Conceptual, and GOB Chemistry"
4. Scroll down and click on "Chemistry for Changing Times (Hill and McGregory)"
5. Open and you will see all the chapters in order of study.

Course Description

This course is an introduction to the language, techniques, methods and principles of chemistry primarily for chemical and refinery plant operators and technicians. Topics include measurements and conversion, basic atomic structure and periodic trends, basic molecular structure, inorganic and organic nomenclature, and organic functional groups. The states of matter, behavior of solids, liquids and gases, and the properties of solutions and solubility are addressed, especially as they relate to organic functional groups and molecular structure. The chemical properties of selected functional groups are described in the context of elementary stoichiometry, kinetics, equilibrium, acidity and alkalinity, and oxidation/reduction.

Course Requirements

Students are encouraged to take detailed notes, especially during lectures. Some test or quiz questions may come from topics explained or expanded upon by the instructor during the course of the lecture. He/she must pay attention during the class session and take careful notes at all times.

Determination of Course Grade/Detailed Grading Formula

Your semester grade will be based on the semester exams, the final exam, class participation/instructor evaluation, laboratory grade, attendance, and Chemical Elements test.

There are a total of **820** points possible:

Chemical Elements		= 50
Semester Exams:	4 @ 100	= 400
Final Exam		= 100

Chapter quizzes (8)	= 80
Laboratory grade (total = 13)	= 130
Lab test	= 30
Attendance	= 30

You must have the following course averages to receive the grades:

Points	Average	Grade
738 – 820	90-100%	A
656 – 737	80-89%	B
574 – 655	70-79%	C
492 – 573	60-69%	D
0 – 491	0-59%	F

The grade for this course consists of both a lecture and a laboratory component. Students must earn a 70% or better in the laboratory component to successfully pass the course. Earning less than 70% in the laboratory component will result in an F for the course regardless of the lecture grade. Passing the laboratory component and failing the lecture component will not guarantee a passing grade for the course. Deviations from this policy will be at the sole discretion of the instructor.

Late Work and Make-up work

If an exam is missed, it will be allowed to be taken as soon as possible, but not later than the next scheduled chemistry 1405 class. Such test may be taken during the regular hours of chemistry 1405 class period at a designated area in the building. If the same student misses **another scheduled test 30 % of the grade will be deducted from his/her actual grade.**

Attendance Policy

Students are expected to attend each lecture and laboratory session for which they are registered. **IF THE STUDENT MISSES MORE THAN SEVEN CLASSES, HE/SHE MAY RECEIVE A FAILING GRADE FOR THE COURSE, UNLESS HE/SHE HAS A VERY VALID EXCUSE FOR MISSING CLASS. NOT GOING TO THE CLASS LECTURE AND GOING ONLY TO THE LAB SESSION WILL STILL BE CONSIDERED AS BEING ABSENT.**

Late work.

Laboratory reports submitted after the due date will be deducted 5 points. Any part of the laboratory reports submitted later than the above-mentioned period will not be accepted. Students who arrive late or leave early will be considered tardy i.e., not in full attendance. Keep in mind that students who are tardy (more than 15 minutes late) create distractions or disruptions of the learning process and everything must be done to avoid being late or leaving early. **More than 15 minutes late will be considered an absence.** Students who

are tardy on exam days will be given the exam but must turn it in when the students who were on time have completed their exams. **The time allowed for exams is 45 minutes after 50% of the class has finished the exam.**

Some of the Laboratory experiments are short and may not require all of the scheduled time. During such days students are expected to work on interpreting the Lab results, or work on assignments or study materials related to the lecture class. **Students must not leave before his/her lab partners do. Doing so will result on student who left before time getting a 0 (zero) for that lab.**

Communicating with your instructor: ALL electronic communication with The instructor must be through COM email. Due to FERPA restrictions, faculty cannot Share any information about performance in the class through other electronic means. (Faculty may add additional statement requiring monitoring and communication Expectations via D2L or other LMS.

Students Core learning Objectives and Outcomes

Student Learner Outcomes	Maps to Core Objectives	Assesses via this assignment
1. Develop a sound foundation in the vocabulary of chemistry, the nomenclature of inorganic and selected organic substances, and the physical and chemical properties and selected organic substances 2. Understand the fundamental facts, principles, theories, laws, and concepts necessary for further studies in science and related subjects 3. Categorize the structure, state, and physical and chemical properties of matter. 4. Follow laboratory procedures, correctly manipulate laboratory equipment, properly handle chemicals, use proper safety techniques, locate needed safety information 5. prepare and submit properly recorded data and laboratory questions	Critical Thinking (CT) Empirical and Quantitative Skills (EQS)	1. Final Exam –selected questions 2, 3.Final Exam – selected questions 4, 5. Laboratory Evaluation
6. Identify and solve basic chemistry problems, conversions, and calculations.	Critical Thinking (CT) Empirical and Quantitative Skills (EQS)	Final Exam –selected questions
7. Develop the ability to work cooperatively with classmates.	Team Work (TW) Communication Skills-written (CS)	Lab Procedure grade Laboratory evaluation Grade (CS)

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Academic Dishonesty

Any incident of academic policy will be dealt with in accordance with college policy and the Student Handbook. Academic dishonesty – such as cheating on exam/quizzes is an extremely serious offense and will result in a **grade of zero** on that exam/quiz and the student may be referred to the Office of Student Conduct for the appropriate discipline action. For that purpose, cell phones **are not** allowed to be used as a calculator. **In addition, cell phones are not allowed to be out during class.**

Students must act in a professional manner at all times. Disruptive students will be held accountable according to college policy. Any violations of the Code of Conduct will result in a referral to the Office for student Conduct and may result in dismissal from this class. If you are in any way disruptive in class, I will document it and let you know privately. The third time I have to call you in, you may be dropped from the course. Again, cell phones are not allowed on the desk. If a student needs to use the phone during class, he or she must step outside to use it. Note will be taken of the times the student does this. After the fourth time during the semester, the student will be considered absent from class for the day when the student commits the 4th. transgression of telephone usage. The use of electronic smoking devices is prohibited in class, as well as on Campus proper.

Student Concerns

If you have any questions or concerns about any aspect of this course, please contact me using the contact information previously provided. If, after discussing your concern with me, you continue to have questions, please contact Sheena Abernathy, Science and Engineering Dept. Chair at (409) 933-8330.

Course Outline

1. Chapter Exams

Four exams: (Unit 1), two exams for 3 chapters, one exam for 2 chapters, plus the final exam (comprehensive). If a student without a valid, verifiable reason does not take one of the Chapter exams, a grade of zero may be recorded. You are allowed to make-up one of the missed exams during the next scheduled class day, therefore may be missing the lab session with no points scored for that lab. **These exams are in addition to the Chemical Elements exam (50 points), which is given in the second week from the beginning of the course. Each of these chapter exams are worth 100 points. If a student fails to take the exam on the day scheduled, 10 points will be taken for every day after the test day is scheduled, at the discretion of the instructor.**

2. Final Exam

The final exam is worth 100 points. **It is a mandatory exam.** The final exam will be a cumulative exam encompassing the material for the entire semester. Failure to take the final exam represents unsatisfactory progress and failure to complete the course. This will result in a course grade of “F”.

3. Laboratory Grade

Laboratory sessions are a required portion of this course and allow you to practice skills and make observations of the concepts studied during class sessions. Your lab performance will be a part of your final grade. You must *safely* perform all lab experiments and clean up your lab station. Certain rules of conduct must be followed to minimize the possibility of your harming yourself or your fellow students (carelessness, horseplay, or destructiveness will result in your instructor dropping you from this course immediately). A laboratory test will be given at the end of the semester that includes details of labs that have been performed during the semester. **Again, all students within a group must leave together when finished, so to not leave his/her other lab partners to clean up or pick up afterward by themselves. Attendance and evaluation of the student will be graded by the instructor during the lab(s) section of the course.**

All students must have the lab for that day printed in advance of the class. Not having the assigned lab printed could mean points taken from that lab.

A Pre-Lab talk covering specific instructions, procedures and safety features for some laboratory session will be given to you before you enter the laboratory. **It is mandatory to attend this session before you perform a Laboratory experiment.** The data that you obtain during the course of each experiment must be recorded on a DATA SHEET and later transfer to the appropriate place in your laboratory paper. All questions and problems following each experiment are to be completed unless the instructor directs otherwise. The recording of data and solutions/answers to problems/questions are to be neatly written **and legible**. Failure to record data in this manner will result in a grade penalty. A pre-laboratory quiz may be given to assess the student's familiarity with the experiment. It will be worth half the lab points (5 points, one point each question). If given, those points will be part of the 10 points for the lab on that day.

The cumulative laboratory grade is used toward the total grade points, not including 30 points for the laboratory test. Each laboratory will be worth 10 points.

At his discretion, the instructor may give a short “pre-lab” quiz before any laboratory to see if the student has read the lab in advance to become familiarized with the work for that day. If the student cannot answer the simple questions about that day's lab, 5 points will be deducted from the lab score. Since the procedure for the day's lab will be explained by the instructor, redundant questions once in the lab by the student on how to calculate a question, or a “how do I do this” may result in points taken off from the instructor's evaluation.

4. Chapter quizzes

A number of chapter quizzes will be given during the semester. Normally it will be eight quizzes. Each quiz will be worth 10 points for a total of eighty (80) points. They will be administered the following class day **after** the corresponding lecture for that chapter has been given.

TENTATIVE CLASS/LAB SCHEDULE FOR SPRING SEMESTER 2024

(The instructor reserves the right to modify/ change labs, dates, chapters, etc.)

Week 1

Tues 1/16

Chapter 1.
Safety Video. Orientation. Handouts,
Common laboratory glassware in lab.
Start Unit 1.

Thurs 1/18

Exp. 1: Chemical Lab Safety.
Unit 1.

Week 2

Tues 1/23

Unit 1

Thurs 1/25

TEST ON CHEMICAL ELEMENTS.
Exp. 2: Making Measurements.
Review for test Unit 1.

Week 3

Tues 1/30

TEST UNIT 1.

Thurs 2/1

Exp. 3: Relating Mass and Volume

Week 4

Tues 2/6

Chapter 2

Thurs 2/8

Exp. 4: Exothermic-Endothermic Reactions.
Chapter 2.

Week 5

Tues 2/13

Chapter 3.

Thurs 2/15

Exp. 5: Periodic Table lab.

Week 6

Tues 2/20

Chapter 3. Start Chapter 4.

Thurs 2/22

Exp. 6: Separating a Ternary Mixture
Chapter 4.

Week 7

Tues 2/27

Finish Chapter 4. Start Chapter 5.

Thurs 2/29	<u>Exp. 7: Stoichiometry Lab (handout)</u> Review for test chapters 2, 3, 4.
<u>Week 8</u>	
Tues 3/5	TEST CHAPTERS 2, 3, 4.
Thurs 3/7	<u>Exp. 8: Boyle's Law</u> Chapter 5. Chapter 5 (Cont.).
<u>3/11-3/17</u>	<u>SPRING BREAK. COLLEGE CLOSED.</u>
<u>Week 9</u>	
Tues 3/19	Finish chapter 5 (cont.) Chapter 6.
Thurs 3/21	<u>Exp. 9: P-T Law.</u> Chapter 7.
<u>Week 10</u>	
Tues 3/26	Chapter 7. Start Chapter 8? Review for test chapters 5, 6, 7
Thurs 3/28	TEST CHAPTERS 5, 6, 7.
<u>Week 11</u>	
Tues 4/2	Chapter 8.
Thurs 4/4	<u>Exp. 10: Titrating Vinegar.</u> Chapter 9
<u>Week 12</u>	
Tues 4/9	Chapter 9.
Thurs 4/11	<u>Exp. 11: Monoprotic Acid-Base Titration.</u> (Handout). Review test chapters 8, 9.
<u>Week 13</u>	
Tues 4/16	TEST CHAPTERS 8, 9.
Thurs 4/18	<u>Exp. 12: Heat of Fusion for Ice.</u>
<u>Week 14</u>	
Tues 4/23	Chapter 9 (Cont. II & III).
Thurs 4/25	<u>Exp. 13: pH of Household Items.</u>
<u>Week 15</u>	
Tues 4/30	Finish Chapter 9 (III) Start ch. 9 (IV).

Thurs 5/2

Finish Chapter 9 (IV). LAB TEST.
Review for final exam

Week 16

Tues 5/5

FINAL EXAM

Thurs 5/7

EXTRA DAY IF NEEDED.

Institutional Policies and Guidelines

Grade Appeal Process: Concerns about the accuracy of grades should first be discussed with the instructor. A request for a change of grade is a formal request and must be made within six months of the grade assignment. Directions for filing an appeal can be found in the student handbook [https://www.com.edu/student-services/docs/Student Handbook 2023-2024 v2.pdf](https://www.com.edu/student-services/docs/Student_Handbook_2023-2024_v2.pdf).

An appeal will not be considered because of general dissatisfaction with a grade, penalty, or outcome of a course. Disagreement with the instructor's professional judgment of the quality of the student's work and performance is also not an admissible basis for a grade appeal.

Academic Success & Support Services: College of the Mainland is committed to providing students with the necessary support and tools for success in their college careers. Support is offered through our Tutoring Services, Library, Counseling, and through Student Services. Please discuss any concerns with your faculty or an advisor.

ADA Statement: Any student with a documented disability needing academic accommodation is requested to contact Kimberly Lachney at 409-933-8919 or klachney@com.edu. The Office of Services for Students with Disabilities is located in the Student Success Center.

Textbook Purchasing Statement: A student attending College of the Mainland is not under any obligation to purchase a textbook from the college-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

Withdrawal Policy: Students may withdraw from this course for any reason prior to the last eligible day for a "W" grade. Before withdrawing students should speak with the instructor and consult an advisor. Students are permitted to withdraw only six times during their college career by state law. The last date to withdraw from the 1st. 8-week session is February 28. The last date to withdraw from the 16-week session is April 22. The last date to withdraw from the 2nd. 8-week session is May 1st. The last day to withdraw for Spring mini session is May 29.

FN Grading: The FN grade is issued in cases of *failure due to a lack of attendance*, as determined by the instructor. The FN grade may be issued for cases in which the student ceases or fails to attend class, submit assignments, or participate in required capacities, and for which the student has failed to withdraw. The issuing of the FN grade is at the

discretion of the instructor. The last date of attendance should be documented for submission of an FN grade.

Early Alert Program: The Student Success Center at College of the Mainland has implemented an Early Alert Program because student success and retention are very important to us. I have been asked to refer students to the program throughout the semester if they are having difficulty completing assignments or have poor attendance. If you are referred to the Early Alert Program you will be contacted by someone in the Student Success Center who will schedule a meeting with you to see what assistance they can offer in order for you to meet your academic goals.

Resources to Help with Stress: If you are experiencing stress or anxiety about your daily living needs including food, housing or just feel you could benefit from free resources to help you through a difficult time, please click here: <https://www.com.edu/community-resource-center/>. College of the Mainland has partnered with free community resources to help you stay on track with your schoolwork, by addressing life issues that get in the way of doing your best in school. All services are private and confidential. You may also contact the Dean of Students office at deanofstudents@com.edu or communityresources@com.edu.