



**CHEM-1406-221H3**  
**Introductory Chemistry I-Fall 2024**  
**Lecture asynchronous.**  
**Labs In Person On Tuesday 6:00 - 8:50 PM, Steam, Bldg. rm 346**

**Instructor Information:** Claudio Carra, PhD  
ccarra@com.edu

**Office hours and location:** After class or by appointment in Microsoft Webex

**Required Textbook/Materials:** The textbook and homework system are part of the inclusive access and are available immediately upon access to Brightspace D2L at the start of the semester.

**Textbook:** [Chemistry for Changing Times](#) (Hill and McCreary)

The textbook for this class is immediately available for free online! The entire textbook and individual chapters are posted in the course shell on D2L. Alternatively, follow the link above to access the textbook.

**Required Homework System:** Macmillan Learning Achieve homework system is an Internet based homework, testing, and content management system. Instructions for creating a Macmillan Learning Achieve homework system account and registering for the course are provided in the Course Information page located in Brightspace D2L.

Once you have registered and enrolled, you can log in at any time to complete or review your homework assignments. During sign up or throughout the term, if you have any technical problems or grading issues, go to [Achieve Support](#) to look at support articles or chat with a member of the support team at [Achieve Chat](#). The Macmillan Learning Achieve support team is almost always faster and better able to resolve issues than your instructor.

**Additional Materials:**

- An inexpensive scientific calculator (e.g., TI-30). There are free apps for your mobile devices. A calculator will be provided to each student for the purpose of taking exams.
  - An [e-mail account](#) (COM provides free email for students)
  - [Microsoft Office, Microsoft OneNote, and Microsoft Teams](#) (COM offers free Office 365 access for students)
  - [Vernier Graphical Analysis](#) (Vernier offers free software for students)
  - File conversion software for converting image files to PDF files ([Microsoft Office Lens](#), [Adobe Scan](#), and [Genius Scan](#) are free for both Android and iOS)
- A PDF reader like [Adobe Reader](#)

**Course Description:** Survey course introducing chemistry. Designed for allied health students and for students who are not science majors. 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.

**Course Requirements:** Students are expected to meet the following course requirements. Stay Current: You will use the Course Outline, the online calendar, the discussion forums, communication with your instructor, and communication with your classmates to stay abreast of course scheduling.

Meet Learning Objectives: You will cover the course material listed in the Student Learning Objectives by accessing information from the textbook, from Sapling Learning, from the Internet, from the Library, and from other resources, as needed.

Stay in Communication: You will maintain communication with your classmates and instructor, as needed. Typical methods for communicating include interpersonal communication, email, text messaging, instant messaging, and discussion forum postings.

Complete Assessments: Your knowledge of the material covered in the Student Learner Outcomes is assessed using Now You Try It, online homework, exams, and laboratory experiments.

**Determination of Course Grade/Detailed Grading Formula:**

<b>Your grade will be determined by the following</b>	<b>Details</b>	<b>Percent of Final Average</b>
Online Assignments	The assignments include a series of Quizzes and Homework available in Achieve® embedded in D2L	10
Exams	The first two exam will be in person in the computer room, The remaining one and the final exams will be done online online using <i>lockdown browser</i> , see disclosure below. The first Exam is on chapters 1, 2, 3. The second Exam is on chapters 4, 5, 6, and the third Exam is on chapters 7, 9, 11. <b>The periodic table and the formula sheet will be available. No electronics allowed; the calculator will be embedded in the lockdown browser. The exams are equally balanced, and no dropping grade rule.</b>	40
Final Exam	It is comprehensive on all the program. The formula sheet and periodic table will be provided. The calculator will be embedded in Lockdown browser. No electronic devices are allowed.	30
Laboratory	Word document describing each experiment are available in Assignments module under <b>POST Lab</b> . They have to be filled up and reuploaded once completed in the same session. A 5% score reduction will be applied to each day delay. Everything has to be typed, no scan allowed. A plagiarism check will be performed with the use of turnitin.com.	20

Extra Credit Class notes/Summary	One point per chapter added to the final score. The class summary has to be written down on a copy book, or tablet, <b>by hand</b> , no word documents. At least 7 pages from each chapter. Make sure to add some examples, pictures, formulas, and chemical reactions. You will receive 1 pt for each chapter. <b>No point</b> will be given after the following deadlines: <b>Chapters 1, 2, 3 due before the date of Exam 1;</b> <b>Chapters 4, 5, 6 due before the date of Exam 2;</b> <b>Chapters 7, 9, 11 due before the date of Exam 3;</b> The class notes/summary have to be shown in person after the lab session.	+ 1pt
Extra Credit active participation	The student has to present a relevant and insightful question during the lecture, or a problem/exercise with a partial developed solution.	+ 1pt
Lab absence	Laboratory activities are mandatory. Absence, for any reason, will reduce the final grade by 10 points. A make up to void the penalty may be possible if the schedule allows.	-10 pt
<b>Total</b>	100%	

**Late Work, Make-Up, and Extra-Credit Policy:** Late work will receive a 5% score reduction for each day delayed. There are no make-up assessments. For Exams, unless compelling and official evidence is presented, as doctor note for instance. Make ups for Lab absence, only once per semester, may be possible if the schedule permits.

### Online Exam Protocol

Lockdown Browser with Monitoring, web cam, will be used to proctor the exams. It is required that the student completes a full panoramic video showing an environment free from everything. Please do not show all the room, just the working space, either a table or a desk. You cannot be on a bed or couch. During the video, *focus on showing what you have in front of you*, rotate *slowly* the camera to the left, center, and to the right side of the working space, then raise slowly the camera to show what you have in front of you, at the level of your eyesight. Please refer to this video as example:

[Example of environment check](#)

*Nothing* is allowed in your working space, including dual monitor, phones, smartwatches, headphones, or any electronic device. Essentially clear the working area from everything, you can put back what you had after the exam. The calculator and periodic table will be embedded, however, only a 4-operation calculator may be allowed.

If scratch paper is used, that's recommended, it has to be shown as blank during the environment video. Pens, pencils, erasers, and sharpeners are allowed. The formula sheet cannot be used, it will be available only for the final Exam.

Any violation from this protocol may invalidate the test and a grade 0 may be assigned. Excuses may not be accepted.

Lockdown Browser notifies if there are internet issues or slow connections. It is a student responsibility to find, in the online setting, the optimal study environment that allows a suitable internet connection.

**Attendance Policy:** Laboratory activities are mandatory. Absence, for any reason, will reduce the final grade by 10 points. One makeup to void the penalty may be possible if the schedule allows.

**Communicating with your instructor:** ALL electronic communication with the instructor must be through your 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)

<b>Student Learner Outcome</b>	<b>Maps to Core Objective</b>	<b>Assessment(s)</b>
1. Understand the different states of matter and the difference among elements, compounds and mixtures.	Critical Thinking	Selected Exam Questions
2. Understand SI units and use dimensional analysis to perform calculations correctly with proper attention to units.	Critical Thinking Communication Skills	Selected Exam Questions
3. Understand the basic model of the atom.	Critical Thinking	Selected Exam Questions
4. Understand types of chemical bonds and know theories of chemical bonding and the forces that influence molecular shapes.	Critical Thinking	Selected Exam Questions
5. Determine name and formulas of binary molecular compounds, ionic compounds, and acids.	Critical Thinking	Selected Exam Questions
6. Balance chemical equations, identify basic types of chemical reactions and write molecular, total and net-ionic equations.	Empirical and Quantitative Skills	Selected Exam Questions
7. Use the concept of the mole in quantitative chemical calculations and identify the limiting reactants.	Critical Thinking	Selected Exam Questions
8. Understand stoichiometric relationships involved in reactions.	Critical Thinking	Selected Exam Questions
9. Calculate and utilize solution concentration units such as molarity.	Critical Thinking	Selected Exam Questions
10. Understand the gas laws and its application in quantitative problems.	Critical Thinking	Selected Exam Questions
11. Understand the acid/base and pH concept.	Empirical and Quantitative Skills	Selected Exam Questions

**Academic Dishonesty:** Any incident of academic dishonesty will be dealt with in accordance with college policy and the Student Handbook. Academic dishonesty, such as cheating on exams,

plagiarism, or collusion, is an extremely serious offense and will result in at least a grade of zero on that assignment and the student will be referred to the Office of Student Conduct for the appropriate disciplinary action. Additionally, administrative withdrawal from the course prior to the withdrawal deadline for the semester or being assigned a grade of F after the withdrawal deadline are possible and solely at the discretion of your instructor

**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 Ms. Sheena Abernathy, Science Department Chair, at [409-933-8330/sabernathy@com.edu](mailto:409-933-8330/sabernathy@com.edu).

**Course outline:** (include calendar with lecture topics, due dates)

	<b>Recommended study guide (online)</b>	<b>Laboratory (in person)</b>
week 1	<b>8,19,2024</b> review the class	
	8,21,2024	<i>Achieve Access Directions</i>
week 2	<b>8,26,2024</b> Chapter 1 Essential Ideas	
	8,28,2024	<i>Lab 1: Safety in the Chemistry Lab</i>
week 3	<b>9,2,2024</b> Chapter 2 Atoms, HW1 due	
	9,4,2024	<i>Lab 2: Weight and Volume</i>
week 4	<b>9,9,2024</b> Chapter 2 Atoms cont. HW2 due	
	9,11,2024	<i>Lab 3: Density and Graphing</i>
week 5	<b>9,16,2024</b> Chapter 3 Atomic Structure	
	9,18,2024	<i>Lab 4: Identifying White Solids</i>
week 6	<b>9,23,2024</b> Chapter 3 Atomic Structure HW3 due	
	9,25,2024	<i>Exam 1 in person ch.1-2-3.</i>
week 7	<b>9,30,2024</b> Chapter 4 Chemical Bonds	
	10,2,2024 <i>Lab 5: Periodic Table (online)</i>	<i>Lab 6: Spectroscopy / Spectral Lines</i>
week 8	<b>10,7,2024</b> Chapter 4 Chemical Bonds cont hw4 due	
	10,9,2024	<i>Lab 7: Lewis Structures and The Shapes of Molecules</i>
week 9	<b>10,14,2024</b> Chapter 5 Chemical Accounting	
	10,16,2024	<i>Lab 8: Investigation of Intermolecular Forces</i>
week 10	<b>10,21,2024</b> Chapter 6 Gases, Liquids, Solids.	
	10,23,2024	<i>Exam 2 in person ch.4-5-6.</i>
week 11	<b>10,28,2024</b> Chapter 7 Acids and Bases	

	10,30,2024	<i>Lab 9: Types of Chemical Reactions (on-line)</i>	<i>Lab 10: Stoichiometry</i>
week 12	<b>11,4,2024</b>	Chapter 7 Acids and Bases	
	11,6,2024		<i>Lab 11: Gas Laws</i>
week 13	<b>11,11,2024</b>	Chapter 9 Organic Chemistry	
	11,13,2024	<i>Lab 12: Concepts of Concentration (on-line)</i>	<i>Lab 13: Acidity and Alkalinity of Household Chemicals</i>
week 14	<b>11,18,2024</b>	Chapter 11 Nuclear Chemistry	
	11,20,2024		<i>Lab 14: Synthesis and Identification of Esters</i>
week 15	<b>11,25,2024</b>	Thanks giving (no class)	
	11,27,2024	Thanks giving (no class)	
week 16	<b>12,2,2024</b>	Exam 2 in person ch.7-9-11	
	12,4,2024	Final Exam on all the program	

The schedule may be subjected to changes that will be communicated to the student by email in a timely manner.

**Grading Scale:** This table contains the grading scale applied to the points calculation previously described.

<b>Letter Grade</b>	<b>Final Average</b>
A	89.5 – 100
B	79.5 – 89.4
C	69.5 – 79.4
D	59.5 – 69.4
F	< 59.5

**Incomplete Policy:** An incomplete may be assigned at the discretion of the instructor in accordance with college policy.

**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.

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## **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 2024-](https://www.com.edu/student-services/docs/Student_Handbook_2024-)

[2025 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 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 accommodations is requested to contact:

Kimberly Lachney, Student Accessibility Services Coordinator

Phone: 409-933-8919

Email: [AccessibilityServices@com.edu](mailto:AccessibilityServices@com.edu)

Location: COM Doyle Family Administration Building, 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 1<sup>st</sup> 8-week session is October 2. The last date to withdraw from the 16-week session is November 15. The last date to withdraw for the 2<sup>nd</sup> 8-week session is November 26.

**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](mailto:deanofstudents@com.edu) or [communityresources@com.edu](mailto:communityresources@com.edu).

**Nondiscrimination Statement:**

The College District prohibits discrimination, including harassment, against any individual on the basis of race, color, religion, national origin, age, veteran status, disability, sex, sexual orientation, gender (including gender identity and gender expression), or any other basis prohibited by law. Retaliation against anyone involved in the complaint process is a violation of College District policy.