

CLARENDON COLLEGE
Division of Science and Health
Chemistry Department
Fall Semester 2024

Course Name: CHEM 1311 General Chemistry I

Credit Hours: 3

Classroom Location: Room 208 Instructional Center

Office: Room 210 Instructional Center

Instructor: Larry Wiginton, M.S.

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Office Hours:

Monday - 8:00-11:00 AM

Wednesday, Friday - 9:00-11:00 AM

Tuesday, Thursday 8:00 AM – 9:30 AM

Course Description: Fundamental principles of chemistry for majors in the sciences, health sciences, and engineering; topics include measurements, fundamental properties of matter, states of matter, chemical reactions, chemical stoichiometry, periodicity of elemental properties, atomic structure, chemical bonding, molecular structure, solutions, properties of gases, and an introduction to thermodynamics and descriptive chemistry.

Pre-Requisite: Math 1314

Co-requisite: Concurrent enrollment in Chemistry 1111 (lab) is recommended.

Statement of Purpose: The course is intended to prepare the student for future studies in chemistry and other related scientific areas. This course meets the core requirements of a laboratory science for the Associate in Arts or Associate in Science degree.

Textbook: Not required

Methods of Instruction: Lecture, demonstration, audience response, audio-visual materials, homework, and the student portal

Clarendon College Campus Carry Policy: Please click the following link to become informed about our campus carry policy: <http://www.clarendoncollege.edu/CampusCarry>

Core Objectives Critical thinking skills (CT) – to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information **Communication skills (COM)** –

to include effective written, oral, and visual communication **Empirical and quantitative skills (EQS)** – to include applications of scientific and mathematical concepts **Teamwork (TW)** – to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.

Learning Outcomes: Upon successful completion of this course, students will:

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

Assessment: These outcomes will assess CT and EQS objectives with embedded questions.

Grading Policies: There will be 5 exams including the final covering lecture and text material (approximately two topics per exam). During class short class quizzes will be given (approximately 15-18). The quiz average of the ten best grades will count as a grade. Class grading will be based on 5 exams plus the quiz average.

Exams: Each exam will cover approximately 2 chapters. The exams will consist of 40% objective questions (true/false and multiple choice) and 60% free response (problems with calculations). Work carefully, but pace yourself to finish within the time allotted. Exams can only be turned in during the exam period. If you are going to be absent for a college excused activity, you will need to make arrangements to take your exam prior to leaving.

Homework: Students will be assigned Practice Sets for each chapter. Test questions will be developed from these worksheets. Therefore, it is extremely important that each student work the problems assigned. Questions about problems will be discussed during class time.

Grading Scale for the course:

| Letter Grade | Numeric Grade |
|--------------|---------------|
| A | 90-100 |
| B | 80-89 |
| C | 70-79 |
| D | 60-69 |
| F | 59 and below |

Classroom Policies:

Calculators: A scientific calculator is required for use on exams. The calculator should support scientific notation (e.g. “1.1E+01”), and a typical set of scientific functions including trigonometric, exponential and logarithmic functions. A graphing calculator may be used if you demonstrate that the memory has been cleared. You may not share a calculator. Laptops, tablets, cellphones or any device with wireless communication capabilities are prohibited during an exam.

Cellphones: Cellphone use is prohibited. They must be turned off or on silent and in your backpack, purse, or pocket. No calls, no texting, and no internet access is permitted unless prior arrangements have been made with me.

Classroom and Zoom Meeting Conduct: I will show you the respect you deserve as a student. I, in return, expect respectful behavior from you. Because the following actions cause disruption in the classroom and therefore affect the ability of students to learn, I have strict policies concerning them.

Disrespectful behavior includes...

- **Arriving late to class or lab.**
- **Leaving the room during class or lab time.** Plan restroom visits before or after class—not during class. If special needs exist, please make prior arrangements.
- **Using distracting electronic communication devices during class or lab.** This includes cell phones, laptops, tablets, etc. for purposes that are not related to coursework.
- **Sleeping in class.**
- **Talking in class about non-relevant topics.** Class time is not for visitation with fellow classmates.
- **I do NOT allow abusive, obscene, or offensive clothing, jokes, or behavior.**
- **Disrespectful behavior could result in your being asked to leave the class.**

Absences: Attendance will be recorded each day. Data indicates that higher attendance rates increase the chance a student will complete the course with a passing grade. Be on time. If you are not present when attendance is taken, you will be counted absent. No late exams are allowed, except by special arrangement. If you are going to miss an exam with a college excused absence, contact me to make arrangements for taking the exam early. Documentation will be required for college excused absences. If prior contact is impossible, you must contact me by the end of the second working day after the absence to arrange for make-up work.

Studying: This course covers a lot of material and will move fast! Make sure that you do not get behind and schedule for regular study time. Needed study time will vary individually, but at least 8-10 hours per week is recommended outside of class. The purpose of lecture is to further explain and reinforce comprehension of the reading material. It is in your best interest to complete reading assignments before coming to class. If you are having trouble with a topic or individual problems, please contact me for an appointment during office hours or take advantage of free tutoring services which will be provided in the library.

College Policies

Academic Integrity Policy: Clarendon College is committed to a philosophy of honesty and academic integrity. It is the responsibility of all members of the Clarendon College community to maintain academic integrity at Clarendon College by refusing to participate in or tolerate

academic dishonesty. Any act of academic dishonesty will be regarded by the faculty and administration as a serious offense.

Academic dishonesty violations include, but are not limited to: (1) obtaining an examination, classroom activity, or laboratory exercise by stealing or collusion; (2) discovering the content of an examination, classroom activity, laboratory exercise, or homework assignment before it is given; (3) observing the work of another during an examination or providing answers to another during the course of an examination; (4) using an unauthorized source of information during an examination, classroom activity, laboratory exercise, or homework assignment ; (5) entering an office, classroom, laboratory, or building to obtain unfair advantage; (6) taking an examination for another person; (7) completing a classroom activity, laboratory exercise, homework assignment, or research paper for another person; (8) altering grade records; (9) using any unauthorized form of an electronic communication device during an examination, classroom activity, or laboratory exercise; and/or, (10) plagiarism. (Plagiarism is defined as the using, stating, offering, or reporting as one's own, an idea, expression, or production of another person's work without proper credit. This includes, but is not limited to, turning in a paper purchased or acquired from any source, written by someone other than the student claiming credit, or stolen from another student.)

Students are responsible for reporting known acts of academic dishonesty to a faculty member, the program coordinator, the associate dean, and/or dean. Any student with knowledge of a violation who fails to report it shall him/herself be in violation and shall be considered to have committed an act of academic dishonesty. Additionally, any student who reports him/herself in violation of this code before it is likely that another might consider this possibility will be understood as repentant and acting in good faith. Though the confession will not excuse the student for the violation, the confession will be considered, and the violation should not result in suspension from school except in the most extreme cases.

While academic integrity and honesty are the responsibility of the individual student, each individual faculty member, teaching assistant, and/or laboratory instructor is responsible for classroom management and for maintaining ethical behavior within the classroom and/or laboratory.

A possible violation will be discussed with the suspected violator(s) and an attempt to resolve the case should be made at that point. In cases of convincing evidence, the faculty member should take appropriate action. The faculty member and student should complete a Counseling Sheet regarding the violation. (The Counseling Sheet should contain at a minimum the date and time of the violation, the course, the instructor's name, the student's name, an explanation of the infraction or facts of the case, and the resolution to the incident.) This form should be signed by the student, faculty member, program coordinator, and the Vice President of Student Services. The Vice President of Student Services will maintain a file on all violations. If a faculty member prefers to report the case directly to the Vice President of Student Services, it remains his/her prerogative to do so. Additionally, if the faculty member and the accused student cannot reach a resolution or if the faculty member believes that suspension from school is the only fair sanction, the case should immediately be reported by the faculty member, in writing, to the Vice President of Student Services. If the Vice President of Student Services observes any trends in student behavior which involve more than one violation or act of

academic dishonesty, the Dean is responsible for notifying all faculty members involved, for contacting the student(s) involved, and after consultation with the faculty member(s) involved for taking the appropriate action. The Vice President of Student Services is responsible for the timely notification (normally within two weeks) to all parties of an action taken.

Grievance/Appeals: If you have a dispute concerning your grade or policies in this class, it is the student's responsibility to contact the instructor to discuss the matter. Should things remain unresolved, please follow the procedures described in the Clarendon College Student Handbook or College Policy Manual.

Withdrawal (Dropping the Course): If you decide that you are unable to complete this course or that it will be impossible to complete the course with a passing grade, you may drop the course and receive a "W" on your transcript instead. (The last day to drop a course is available on the Academic Calendar, located at the Student link on the Clarendon College website.) Withdrawal from a course is a formal procedure that you must initiate. If you do not go through the formal withdrawal procedure, you will receive the grade you have earned.

Whether to drop a class or not requires a lot of thought. According to Texas state law a student is only allowed to drop the same class twice before he/she will be charged triple the tuition amount for taking the class a third time or more. Furthermore, beginning with the Fall 2007 semester, students in Texas may only drop a total of 6 courses throughout their entire undergraduate career. After the 6th dropped class, he/she will no longer be able to withdraw from any classes.

Accommodations Statement: Clarendon College provides reasonable accommodations for persons with temporary or permanent disabilities. Should you require special accommodations, notify the Dean of Student Services. The Chemistry Department work with you to make whatever accommodation necessary.

Course Outline:

- (a) matter & measurement
- (b) Structure & stability of the atom
- (c) Periodicity and the electronic structure of atoms
- (d) Chemical bonding
- (e) Molecular structure
- (f) Chemical nomenclature
- (g) Chemical equations
- (h) Chemical stoichiometric calculations
- (i) Thermochemistry