

Course Overview

Chemistry is the study of properties and transformations of matter. It provides a central platform to study other disciplines such as biology, geology, material science, physics, medicine, and many branches of engineering. The primary goal of this course will be to help you develop a solid picture of matter and their properties at the atomic and molecular levels.

This one-year course is designed to meet the curriculum requirements of Chippewa Valley Technical College's General Chemistry 806-134. GHS has an articulation agreement with CVTC that provides transcribed credit for General Chemistry. Thus, this course is considered a CVTC course, as well as a GHS course, and you may choose to receive dual credit. Upon successful completion, you will receive 1.0 GHS credit for General Chemistry and 4.0 CVTC college credits for General Chemistry 806-134. FYI, your CVTC college credits are transferrable to other technical colleges and four-year universities.

Course Topics.

Topics to be covered include: standards for measurement, elements and compounds, properties of matter, early atomic theory and structure, nomenclature of inorganic compounds, quantitative composition of compounds, chemical equations, calculations from chemical equations, modern atomic theory and the periodic table, chemical bonds, gaseous matter, liquid matter, solutions, acids and bases, salts, chemical equilibrium, and oxidation-reduction. These topics will be covered at a rapid pace. This includes learning about the presented concepts, conducting related laboratories, and testing your retention and problem solving skills.

Course Prerequisites.

Chemistry and Algebra II with a grade of "C" or better

Course Materials

Required Text, per CVTC.

Hein, M. & Arena, S. (2014). *Foundations of College Chemistry*. 14th Ed. Hoboken, NJ: John Wiley & Sons, Inc.

Guided Inquiry Text.

Garoutte, M. P. & Mahoney, A. B. (2015). *Introduction Chemistry: A Guided Inquiry*. Hoboken, NJ: John Wiley & Sons, Inc.

Other Required Items.

School Issued iPad

Loose-leaf Paper and Binder OR Composition-style Notebook and Binder

Scientific Calculator (capable of executing typical mathematical operations, including logarithms, exponential functions, etc. and handling scientific notation)

Course Format

Inquiry Instructional Approach.

This strategic methodology will allow us to work as a team to outline learning objectives, organize and cover concepts (e.g., guided inquiry activities, argument driven inquiry investigations), as well as infuse structured guided and independent practice opportunities that offer immediate feedback. Interactive learning tasks will be organized in a binder, which will not only encourage organization, but also serve as a portfolio of your learning.

Daily Coursework.

Cornell-style Notes. Cornell-style notes will be provided. All students are strongly encouraged to take these notes and review them regularly. This research-based approach to note taking, if followed, will encourage concentration and retention. You may choose to use your loose-leaf paper to complete these notes and then place them in your binder, or you may choose to use your composition-style notebook.

Problem Sets. A list of recommended problems will be assigned from our textbook and/or guided inquiry activities. All students are strongly encouraged to solve all problems. Completing this work will help you think critically and practice your problem solving skills. Answer keys will be provided so you can get immediate feedback and seek out any additional assistance when needed. You may choose to use your loose-leaf paper to complete these problem sets and then place them in your binder, or you may choose to use your composition-style notebook.

Laboratory Reports.

Laboratories. Laboratories will allow for a hands-on, direct experience of concepts discussed in class. You will gain proper laboratory technique skills, as well as communicate procedures, observations, results, and conclusions in words and writing through the Argument Driven Inquiry model. Furthermore, you will apply experimental techniques to solving chemical problems.

Safety in the lab is vital. You will be required to sign and abide by a safety contract, as well as follow laboratory directions in order to participate.

Quizzes, Tests, Midterm Exam, and Final Exam.

Quizzes. Quizzes will be given after the completion of each lesson.

Tests. Tests will be given after the completion of each chapter and/or unit.

Midterm and Final Exams. Two comprehensive exams will be given throughout the school year. These exams will take place approximately at the middle and end of the school year.

Academic Assistance

If you should have moments of struggle in this course, please see me immediately. I will help you to get to the root of your concerns and establish a plan of action that provides additional scaffolding (e.g., individualized instruction, graphic organizers, targeted problem-solving opportunities, etc.). I will also be monitoring your growth through formative assessment opportunities and will initiate a meeting, plan of action, etc. if necessary. Your academic success is very important to me.

Academic Honesty

Academic misconduct in any portion of the academic work for this course is a serious offense. Therefore, it is expected that all students conduct themselves with honesty, integrity, and professionalism. Since this is a college course, we will follow CVTC's academic dishonesty policy.

The CVTC Student Handbook has details about Academic Honesty, which you should read and understand, so that you can apply Academic Honesty principles to your course work. (To find the most current copy of the handbook online, Google "CVTC WI Student Handbook.") The handbook covers guidelines on plagiarism, cheating, misrepresentation, falsifying, misuse of others materials, fabrication, and other related topics. I will share just a couple of specific examples with you below.

Students are expected to do their own work at all times unless advised that collaboration is acceptable. When you take a test, you are expected to keep your eyes on your own paper and protect your test paper from being copied by a classmate. You may not have someone take an online/hybrid or proctored test for you. Do not buy course work, have others complete any part of your course activities or assessments for you, or share your work with others (even after the course is completed). This would be academically dishonest. Copying from another person's paper or test is academic dishonesty; it will result in a grade of "0" for that assignment. In addition, you will be referred to Student Services for discipline based on college policy.

You may use facts from other sources if you re-write them in your own words. Any time you quote directly from another source or paraphrase substantially, you must cite the source you used. Failure to use proper citation procedure is considered plagiarism. Plagiarism will result in a grade of "0" if it is flagrant and/or deliberate. In addition, you will be referred to Student Services for discipline based on college policy.

Credit for Prior Learning (CPL)

CVTC Credit for Prior Learning grants college credit for previous knowledge and skills you have mastered through work or volunteer experiences. You might also have previous knowledge from certifications, apprenticeships, military training and professional development. If you are interested in learning more about this opportunity, please contact the Credit for Prior Learning Office.

Equity, Diversity, Equal Opportunity, and Disabilities Accommodations Statement

CVTC will provide equal access to and opportunity in its programs and facilities, without regard to race, ethnicity, color, creed, religion, national origin, ancestry, sex, disability, age, arrest or conviction record, marital status, parental status, mental health, veteran's status, pregnancy, or sexual orientation.

Grading Scale and Assessment Values

Since this is a dual credit course, you will have two separate grades reported: one according to GHS policy and the other according to CVTC policy.

GHS GRADING

Assessments will be given the following point values.

- Mid-Check for Understanding/Practices, 40%
 - Quizzes, 10 points
 - Pre-Lab Questions, 10 points
- End-Check for Understanding/Practices, 60%
 - Tests, 40 points
 - Post-Lab Questions, 10 points
 - Laboratory Reports, 25 points

Quarter will be determined through the weighted grading system described above. Semester grades will be determined through the weighted system below.

- 45% Quarter A
- 45% Quarter B
- 10% Comprehensive Semester Exam

CVTC GRADING

A final grade will be determined through a weighted system.

- 40% Semester I
- 5% Comprehensive Midterm Exam
- 40% Semester II
- 15% Comprehensive Final Exam

Grading Scale

100-93..... A	89-87 B+	79-77.....C+	69-67 D+	59-↓.....F
92-90..... A-	86-83 B	76-73.....C	66-63 D	
	82-80 B-	72-70.....C-	62-60 D-	

GHS Infinite Campus Grading Note: “M” for missing will appear when coursework has not been handed in.

Late Policy.

Coursework must be turned in on assigned due dates. Per CVTC General Chemistry 806-134 policy, late coursework will be issued a 30% deduction. Furthermore, students who do not take their test or exam on the assigned date and period will incur a 10% reduction in their grade for each day. Special consideration may be given if a doctor note is provided.

Grading Feedback from Instructor.

Typically, CVTC instructors will return assignments within one week of the due date, but no more that two weeks. It is my intent to return your tests the next day or as soon as everyone has completed the test, which ever comes first. And, I will return your laboratory reports within one week of the due date or as soon as everyone has completed the report, which ever comes first.

Guidelines for Success

You are starting your career right now. How so? Your classroom performance is likely to be a direct reflection of the type of performer you will be in your job. For example, if you show up to class late, you run the risk of that behavior pouring over into work. Because of this, be sure that you are performing at a level that you believe is the best representation of yourself at all times. Here are some additional guidelines for success:

- Prepare yourself for learning before the day of class. Read all the assigned materials and complete the assigned learning tasks. Ask questions about the content. Think about how the content relates to you, and how it might connect to your future career.
- Engage yourself in the learning community. Actively participate. The more you do, the more you will learn.
- Complete tasks on time. It is disruptive to the learning process when students are arriving at different times or missing deadlines. Notify your instructor if you have a situation or a scheduling conflict.
- Dress appropriately when learning on campus or when performing tasks in learning labs.
- Communicate professionally. Be respectful to each other and each other's ideas. This means not interrupting others or talking to your neighbor while others are talking. Use positive, inclusive language when addressing someone's comments, even when their opinion is different than your own. Type professional emails that include a salutation and contain a business tone.

Tentative Lesson Schedule, Semester I

Week	Lesson Topics	Readings	Laboratory Assessments	Written Assessments
UNIT 1A...Basic Tools of Chemistry: Matter, Measurement, Atoms, and Elements				
Sep 1	Lab Safety, Intro to Chemistry			Gen Chem Pre-Assessment
Sep 5	Intro to Chemistry & Standards for Measurement	1.1-1.4 & 2.1-2.8	Qualitative Analysis of Unknowns & Density is a Periodic Property	C1 (CA2) Quiz & C2 (CA4,5,6) Quiz
Sep 11	Elements and Compounds & Properties of Matter	3.1-3.3 & 4.1-4.6	Periodic Trends and the Properties of Elements	C3 (CA3) Quiz & C4 (CA25) Quiz
Sep 18	Properties of Matter	4.1-4.6		Unit 1A Test
UNIT 1B...Basic Tools of Chemistry: Molecules, Ions, and Their Compounds				
Sep 25	Early Atomic Theory and Structure	5.1-5.6		C5 (CA7) Quiz
Oct 2	Nomenclature of Ionic Compounds	6.1-6.5		C6 (CA11,12,15) Quiz & Unit 1B Test
UNIT 1C...Basic Tools of Chemistry: Chemical Equations and Stoichiometry				
Oct 9	Quantitative Composition of Compounds	7.1-7.5	A Mole of What?	C7 (CA18,29,3) Quiz
Oct 16	Chemical Equations	8.1-8.5	Precipitation Reactions and Solubility Rules	C7 Test & C8 (CA19) Quiz
Oct 23	Chemical Equations	8.1-8.5		C8 (CA21,2) Quiz
Oct 30	Calculations from Chemical Equations	9.1-9.5	Gravimetric Analysis of Calcium and Hard Water	C8 Test & C9 (CA20A,B) Quiz
Nov 6	Calculations from Chemical Equations	9.1-9.5		Unit 1C Test
UNIT 2...The Structure of Atoms and Molecules				
Nov 13	Modern Atomic Theory and the Periodic Table	10.1-10.5	Spectroscopy and Flame Tests	
Nov 20	THANKSGIVING BREAK			
Nov 27	Modern Atomic Theory and the Periodic Table	10.1-10.5	Magnetism and Atomic Structure	C10 (CA9) Quiz
Dec 4	Modern Atomic Theory and the Periodic Table	10.1-10.5		C10 (CA10A,B) Quiz
Dec 11	Chemical Bonds: The Formation of Compounds from Atoms	11.1-11.10	Molar Shapes and Polarity	C10 Test & C11 (CA22) Quiz
Dec 18	Chemical Bonds: The Formation of Compounds from Atoms	11.1-11.10		C11 (CA21,12) Quiz & Unit 2 Test
Dec 25	WINTER BREAK			
Jan 2	Comprehensive Review of Entire Semester			Midterm Exam
UNIT 3...States of Matter				
Jan 8	The Gaseous State of Matter	12.1-12.9		
Jan 15	The Gaseous State of Matter	12.1-12.9	Determining the Molar Volume of a Gas	C12 (CA26) Quiz

Tentative Lesson Schedule, Semester II

Week	Lesson Topics	Readings	Laboratory Assessments	Written Assessments
Jan 22	The Gaseous State of Matter	12.1-12.9		C12 Test
Jan 29	Liquids	13.1-13.7		C13 (CA24) Quiz
Feb 5	Liquids	13.1-13.7		C13 (CA27) Quiz
Feb 12	Liquids	13.1-13.7		C13 Test
Feb 19	Solutions	14.1-14.6	Designing a Handwarmer	C14 (CA28) Quiz
Feb 26	Solutions	14.1-14.6	Toxicity of Road Deicers & Freezing Point Depression	C14 (CA29B) Quiz
Mar 4	SPRING BREAK			
Mar 11	Solutions	14.1-14.6	Molarity	Unit 3 Test
UNIT 4...The Control of Chemical Reactions				
Mar 18	Acids, Bases, and Salts	15.1-15.8		C15 (CA30A) Quiz
Mar 25	Acids, Bases, and Salts	15.1-15.8		C15 (CA30B) Quiz
Apr 2	Acids, Bases, and Salts	15.1-15.8	Acid-Base Titration of an Eggshell	C15 (CA32) Quiz
Apr 8	Acids, Bases, and Salts	15.1-15.8		C15 Test
Apr 15	Chemical Equilibrium	16.1-16.8	Introduction to Reaction Rates	C16 (CA23A) Quiz
Apr 22	Chemical Equilibrium	16.1-16.8		C16 (CA23B) Quiz
Apr 29	Chemical Equilibrium	16.1-16.8	Equilibrium Constant and Temperature	C16 (CA23C) Quiz
May 6	Chemical Equilibrium	16.1-16.8		C16 Test
May 13	Oxidation-Reduction Basics	17.1-17.5	Electrochemistry	C17 Quiz
May 20	Comprehensive Review of Entire Course			Final Exam