THORP HIGH SCHOOL Instructor: Mrs. Steinbach
Advanced Chemistry/CVTC General Chemistry 806-134 tsteinbach@thorp.k12.wi.us
2018-2019 Syllabus **www.SteinbachScience.com**

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. THS has an articulation agreement with CVTC that provides transcripted credit for Advanced Chemistry. Thus, this course is considered a CVTC course, as well as a THS course, and you may choose to receive dual credit. Upon successful completion, you will receive one THS credit for Advanced Chemistry and four 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 "B" 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.

Other Required Items.

School issued Chromebook
Composition-style notebook
Scientific Calculator (capable of executing typical mathematical operations, including logarithms, exponential functions, etc. and handling scientific notation)

Course Format

Direct Interactive Instruction.

This strategic methodology will allow us to outline learning objectives, organize and cover concepts, as well as infuse structured guided and independent practice opportunities. It is highly recommended that you take detailed notes during this time. Use your composition-style notebook for this purpose. Furthermore, it is good academic practice to review all notes for current material daily.

Daily Coursework.

Problem Sets. A list of recommended questions and problems will be assigned and reviewed during each chapter. All students are strongly encouraged to solve all problems. Completing this work will help you think critically and practice your problem solving skills. Use may choose to use your composition-style notebook to complete your homework.

Laboratory Reports.

Laboratories. Laboratories will allow for a hands-on, direct experience of concepts discussed in class. You will gain physical skills (e.g., proper use of laboratory equipment in titrations), as well as communicate procedures, observations, results, and conclusions in words and writing. 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.

Tests, Semester/Midterm Exam, and Final Exam.

Tests. Tests will be given to cover one to four chapters at a time.

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.

Per CVTC General Chemistry 806-134 policy, 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

Coursework must be turned in on assigned due dates. Late coursework will be issued a 30% deduction.

THS GRADING

A quarter grade will be determined through a weighted system.

- 35% Laboratory Reports (LAB)
- 65% Tests (TEST)

Per school policy, the semester grade will be determined through the weighted system below and grading scale listed below will be utilized in determining all grades.

Semester Grade Weighted System

- 45% Quarter Grade
- 45% Quarter Grade
- 10% Comprehensive Exam

CVTC GRADING

A quarter grade will be determined through a weighted system.

- 35% Laboratory Reports (LAB)
- 65% Tests (TEST)

Final Grade Weighted System

- 20% Quarter 1 Grade
- 20% Quarter 2 Grade
- 5% Comprehensive Midterm Exam
- 20% Quarter 3 Grade
- 20% Quarter 4 Grade
- 15% Comprehensive Final Exam

Grading Scale

100-97 ..... A+	89-87 .....B+	79-77..... C+	69-67 .....D+	59-⇩ ..... F
96-93 ..... A	86-83 .....B	76-73..... C	66-63 .....D	
92-90 ..... A-	82-80 .....B-	72-70..... C-	62-60 .....D-	

Skyward Grading Note: Zeros will appear when coursework has not been handed in. Asterisks will appear when coursework is in the process of being graded.

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 Integrity

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. Depending on the severity of the infraction, consequences will include loss of credit/failure of assignment or failing grade for the course.

Tentative Lesson Schedule, Semester I

Week	Lesson Topics	Readings	Laboratories	Assessments
UNIT 1A…Basic Tools of Chemistry: Matter, Measurement, Atoms, and Elements				
Sep 5 (3 period week)	Lab Safety, Intro to Chemistry, & Standards for Measurement	1.1-1.4 & 2.1-2.8		
Sep 10	Elements and Compounds & Properties of Matter	3.1-3.3 & 4.1-4.6	Periodic Trends and the Properties of Elements	CER Lab Report
Sep 17	Properties of Matter	4.1-4.6		Ch 1-4 Test
UNIT 1B…Basic Tools of Chemistry: Molecules, Ions, and Their Compounds				
Sep 24	Early Atomic Theory and Structure	5.1-5.6		
Oct 1	Nomenclature of Ionic Compounds	6.1-6.5		Ch 5-6 Test
UNIT 1C…Basic Tools of Chemistry: Chemical Equations and Stoichiometry				
Oct 8 (3 ½ period week)	Quantitative Composition of Compounds	7.1-7.5		
Oct 15	Chemical Equations	8.1-8.5		
Oct 22	Chemical Equations	8.1-8.5	Designing a Cold Pack	ADI Lab Report
Oct 29	Calculations from Chemical Equations	9.1-9.5		
Nov 5	Calculations from Chemical Equations	9.1-9.5	Gravimetric Analysis of Calcium and Hard Water	CER Lab Report
Nov 12	Calculations from Chemical Equations	9.1-9.5		Ch 7-9 Test
Nov 19	*BREAK*			
UNIT 2…The Structure of Atoms and Molecules				
Nov 26	Modern Atomic Theory and the Periodic Table	10.1-10.5	Magnetism and Atomic Structure	ADI Lab Report
Dec 3	Modern Atomic Theory and the Periodic Table	10.1-10.5		
Dec 10	Chemical Bonds: The Formation of Compounds from Atoms	11.1-11.10	Bond Character and Molecular Polarity & Molecular Shapes	Two CER Lab Reports
Dec 17 (4 ½ period week)	Chemical Bonds: The Formation of Compounds from Atoms	11.1-11.10		Ch 10-11 Test
Dec 24	*BREAK*			
UNIT 3…States of Matter				
Jan 2 (3 period week)	The Gaseous State of Matter	12.1-12.9	Determining the Molar Volume of a Gas	CER Lab Report
Jan 7	The Gaseous State of Matter	12.1-12.9		
Jan 14	Comprehensive Review of Entire Semester			Ch 1-12 SEMESTER/ MIDTERM EXAM

Tentative Lesson Schedule, Semester II

Week	Lesson Topics	Readings	Laboratories	Assessments
Jan 21	Liquids	13.1-13.7		
Jan 28	Liquids	13.1-13.7	Melting and Freezing Points	ADI Lab Report
Feb 4	Liquids	13.1-13.7		
Feb 11	Solutions	14.1-14.6	Molarity & Enthalpy Change of Solution	Two CER Lab Reports
Feb 18	Solutions	14.1-14.6		
Feb 25	Solutions	14.1-14.6		Ch 12-14 Test
Mar 5	*BREAK*			
UNIT 4…The Control of Chemical Reactions				
Mar 11	Acids, Bases, and Salts	15.1-15.8		
Mar 18	Acids, Bases, and Salts	15.1-15.8	Acid-Base Titration and Neutralization Reactions	ADI Lab Report
Mar 25	Acids, Bases, and Salts	15.1-15.8		Ch 15 Test
Apr 1	Chemical Equilibrium	16.1-16.8		
Apr 8	Chemical Equilibrium	16.1-16.8	Equilibrium Constant and Temperature	ADI Lab Report
Apr 15 (4 period week)	Chemical Equilibrium	16.1-16.8		
Apr 22	Chemical Equilibrium	16.1-16.8		Ch 16 Test
Apr 29	Oxidation-Reduction	17.1-17.5		
May 6	Oxidation-Reduction	17.1-17.5	Electrochemical Cells	CER Lab Report
May 13	Comprehensive Review of Entire Course			Ch 1-17 FINAL EXAM