

# Syllabus Chemistry

## Heritage Academy A University-Model® School

*The mission of Heritage Academy, a Certified University-Model® School, is to partner with Christian parents to prepare college-worthy, character witnesses for Jesus Christ.*

"Science is facts. Just as houses are made of stones, so is science made up of facts. But a pile of stones is not a house and a collection of facts is not necessarily science." ~ Jules Henri Poincare

### I. Course Purpose and Content

Students will explore the theoretical and mathematical basis for chemistry from a Christian worldview. Material in focus will include nomenclature, significant figures, units, classification, the mole concept, stoichiometry, thermochemistry, thermodynamics, kinetics, acids and bases, redox reactions, solutions, atomic structure, Lewis structures, molecular geometry, the gas laws, and equilibrium. Labs in this course will include some specialized equipment.

**Pre-requisites:** Successful completion of Physical Science in Heritage Academy's science sequence and successful completion of Algebra I.

### II. Worldview Integration

Heritage Academy is committed to teaching all subjects in such a way that students develop a Biblical worldview out of which to think and act. Study of the atom, elements, and their interactions reveals incredible order and sequence. God's wisdom and glory is clearly evidenced as we examine the complexity and magnificence of the physical world. *"For since the creation of the world His invisible attributes, His eternal power and divine nature, have been clearly seen, being understood through what has been made, so that men are without excuse..." (Romans 1:20).*

### III. Required Text/Materials

Please reference *Required Text Book List* and *Course Supplies List* for the appropriate academic year to identify the textbooks and supplies students will need for this course. Both the Required Text Book List and Course Supplies List are accessible online.

### IV. Course Guidelines/Student Responsibilities

#### A. Attendance

During on-campus class periods, we will focus on elements of the course that are difficult to complete in a home setting (e.g., experiments, demonstrations, and group discussions). Students are expected to attend class and contribute positively to the classroom environment. Attendance is imperative as concepts cannot be learned if a student is absent. Tardiness is disruptive to other class members. Please arrive on time and prepared. All absences and tardies are considered unexcused unless accompanied by a note from a parent or guardian. Please remember that three tardies generate one absence.

As communicated in Heritage Academy's Family Manual, a passing grade awarded at the end of the semester generally requires that a secondary student has attended at least forty-two class periods during the semester. Failure to meet this minimum attendance requirement may result in an F being awarded and recorded on the student's transcript.

Students are expected to be in attendance during all on-campus class periods. As communicated in Heritage Academy's Family Manual, a passing grade awarded at the end of the semester generally requires that a secondary student has attended at least forty-two class periods during the semester. Failure to meet this minimum attendance requirement may result in an F being awarded and recorded on the student's transcript.

#### B. Absences and Late Work

In the case of planned absence(s), homework that is due during the student's absence must be completed and submitted to the instructor in advance.

A student who is unexpectedly and unavoidably absent due to ill health must submit late assignments within two course periods after the student's return to school. **When an unexpected absence must occur, please be sure to**

**notify the school office and the instructor of the students' absence as quickly as possible, preferably before the involved class occurs. This contact may occur by phone or by email.**

Late work that is submitted simply "late" will be graded and penalized with a **ten percent grade reduction for each course period that it is late**; homework will not be accepted more than three course periods (1 week) past its due date, unless previous arrangements between the teacher and the student's parent have been agreed to in light of peculiar circumstances that are occurring beyond the family's control.

If a student must be absent during a laboratory procedure, written work with a similar point value may be assigned.

### **C. Student Conduct and Preparation for Learning**

For the sake of promoting a safe and focused learning environment, the student is expected to conduct himself/herself in keeping with the following expectations throughout the course of the semester:

- 1) Arrive on time to each class period with the appropriate class materials available for access (e.g., organized notebook with dividers and filed materials, paper, writing tools, texts, and other tools as directed)
- 2) Arrive prepared to submit completed at-home assignments at start of each class period.
- 3) Arrive ready to listen, learn, take notes, and participate in teacher-directed classroom discussions and activities.
- 4) Ask for clarification or further explanation when a concept or direction remains unclear.
- 5) Demonstrate a spirit of cooperation, kindness, and respect toward the teacher and fellow classmates, demonstrating respect to Heritage Academy's Code of Conduct.
- 6) Refrain from horseplay or irresponsible behavior, particularly during laboratory exercises. **Note: Students will be warned once if their classroom behavior is irresponsible or distracting. They will be removed from the classroom, with a zero grade for the day, for the second infraction. Safety in the classroom – during lab exercises, especially – must be a priority for all.**
- 7) Help keep the classroom area clean and orderly.
- 8) Cooperate with the parent-educator and the Heritage Academy teacher to complete homework in a timely fashion
- 9) Communicate concerns regarding schoolwork to both the Heritage Academy teacher and the parent-educator, so that these concerns can be addressed quickly.
- 10) On the whole, conduct himself or herself in a manner that is worthy of Christ and reflects the life of the Holy Spirit in him/her: ". . . that you may live a life worthy of the Lord and may please Him in every way: bearing fruit in every good work, growing in the knowledge of God, being strengthened with all power according to His glorious might so that you may have great endurance and patience, and joyfully giving thanks to the Father, who has qualified you to share in the inheritance of the saints in the kingdom of light" (Colossians 1:12).

### **D. At-Home (Satellite Classroom) Investment**

Daily home-assignments will be outlined on the weekly Home-Communication Sheet the student will receive each Monday. The student can expect to invest approximately 2.5 to 4 hours each week completing coursework at home in preparation for class periods. Course assignments may include any of the following:

- **Reading**
- **Completing questions, problems from the text, or handouts given by the teacher in class.**
- **Memorization Work** (e.g. definitions, formulas, dates, scripture verses, etc.)
- **Lab Exercises:** preparing for experiments or finishing lab write-ups.
- **Maintenance of Course Binder:** The contents, divided by subject divider pages, should include weekly homework sheets, completed homework assignments, class notes, lab write-ups, and returned examinations.

Students may choose to maintain a separate file at home which contains work from completed chapters. *They will need to keep completed work to prepare for the comprehensive semester finals.*

- **Writing:** Students will keep a Chemistry journal. This should be a bound, (NOT spiral bound) composition notebook. Assignments may include: responses to a questions presented in class; gathering information regarding a specific topic; observations or simple procedures done outside of the classroom; writing and planning a laboratory procedure, or other written response. Specific formats will be provided. The journal will be collected randomly to check for completion and content.
- **Conducting Research /Completing Special Projects:** Students may be directed to research various topics throughout the semester for the purpose of presenting information or arguing a point. This may include web work. Plagiarism is never acceptable.
- **Dialog:** Student may be instructed to discuss and/or explore certain topics or concepts with a parent. These assignments will be given purposefully and should not dismissed.
- **Preparation for Tests:** Students may be instructed to review notes, various texts, previously completed tests, scripture verses and/or to complete review questions and practice problem etc, in preparation for tests.
- **Other Assignments:** additional types of assignments may given throughout the semester at the discretion of the instructor.

## F. Assessments

A written examination, or equivalent, will be administered at the end of each unit. At the end of each semester, students will take comprehensive, semester final, in keeping with Heritage Academy's Semester Exam Schedule.

## G. Grades

The student will be awarded points according to the level of mastery he/she demonstrates on assessments, written assignments, laboratory exercises, special projects such as papers, and signed homework sheets. One point will be awarded each week that the student's parent's signature or initials is provided on the home-assignment sheet.

### Grade Apportionment

Labs/Homework	45%
Tests	40%
Final exam	15%

### Grading Scale

Letter grades will be assigned according to the scale below:

100-95.... A	86-83 .....B	76-73.... C	69-60.... D
94-90 ..... A-	82-80.... B-	72-70.... C-	59 or below ....F
89-87 ..... B+	79-77.... C+		

The course grade the student is awarded at the end of the semester will indicate the grade that will also appear on the student's transcript. To receive high school credit for this class and to maintain eligibility for promotion to the next course in Heritage Academy's science sequence, the student must achieve a percentage grade of 70% or above, (which translates to a letter grade of C- or above) and fulfill attendance requirements.

## V. Parent Responsibilities

### A. Embrace the University Model

University-Model Schooling at Heritage Academy is driven by two guiding principles:

- to preserve and strengthen God-ordained family relationships;
- to offer students the opportunity to achieve a high degree of academic excellence.

Heritage Academy operates as a University-Model School®, designed for families who want their students to flourish from a life anchored in the home yet still gain from the best aspects of traditional, classroom education. Courses offered at Heritage Academy occur every-other-day so that students may realize the benefits of qualified

teachers and a focused learning community, yet continue to experience home as the primary, consistent base where parents remain their foremost guides for spiritual, social, academic, and character formation.

Parents, please consider ways you may maximize the benefits University-Model Schooling offers to your family. How can you as parents utilize the at-home study time this model provides to nurture deeper relationship and impart the faith, values, and life-patterns you desire your student to embrace?

**B. Fulfill Parent Role: *Guide for Dependent Study***

Within the University-Model School<sup>®</sup>, **parents commit to fulfill a specified role related to each course** in which their student is enrolled, as prescribed by the course's description. Each role identifies specific responsibilities that the teacher relies on the parent to perform, thus facilitating effective home/school partnership whereby students are assured of receiving needed support. For this course, Heritage Academy has designated parents the role of **"Guide for Dependent Study."**

This role recognizes that many courses at this level will begin to cover subject matter that may be unfamiliar to many parents. At the same time, the student is at a dependent age where disciplined study habits must be developed, not by parental force, but through positive encouragement and through the student's growing awareness of personal consequences. In order for this class to be successful, I as a teacher am depending upon you as parents to ensure that your son or daughter keeps up with the course material and to communicate with me should any difficulties or concerns arise.

**In this course specifically**, each chapter builds upon the concepts learned in the previous chapters. In order for your student to be successful, they must master the material presented in each chapter. Consistent and thorough completion of homework assignments will result in better performance on the chapter assessments, better participation in class discussion, and better learning from experiments. No one is better equipped than you to provide the encouragement, correction and resources needed to allow your students to excel.

Please be sure to:

- Help your student learn the time management tools and advance planning methods they need to accommodate school, family and church activities.
- **Check homework for completion and initial the homework sheet when homework is done.**
- Help your student maintain their binder and files

**C. Monitor Gradelink and View Seven-Week and Thirteen-Week Gradelink Reports**

As your student earns grades for completed tests, quizzes, and various projects and homework assignments, these will be recorded on **Gradelink.com** for you to view at your convenience. My general goal will be to post grades online within a week of their being awarded.

In Gradelink, missing assignments will also be noted. Please take time to follow your student's progress on Gradelink so that you can quickly recognize and explore/address areas of patterns of difficulty or concern that may appear and affirm positive accomplishments.

Gradelink Reports, which will include parent-directed comments related to your student's behavior and progress in class, will be ready for parents to view at the seven-week and thirteen-week point in the semester.

Please contact the office if you have not received your Gradelink login information.

**D. Attend Parent/Teacher Fellowship**

I hope you will take time to come to Parent/Teacher Fellowship scheduled during the 7<sup>th</sup> week of each semester. This will give you and I brief opportunity to connect face-to-face and discuss your student's progress, making the most of the partnership that is so vital to students' success within the University Model<sup>®</sup>.

**VI. Contacting the Instructor**

Teacher contact information will be provided on the weekly communication sheets that will be distributed in class; it may also be found in the school directory.