Dr. David Richardson
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Course Syllabus
431-Advanced Chemistry

I. **Course Description:** This course places great emphasis on developing critical thinking and problem solving skills through laboratory experimentation, mathematical applications, and the sound reasoning found in the scientific method. Students will study the language of chemistry, atomic structure, the organization and practical use of the periodic table, and advanced topics. The idea of the mutual historical interdependence of science and technology to create currently accepted theories will be examined. The interconnectedness of scientific disciplines, current events, and environmental issues will also be summarized. Student teams will work effectively to evaluate data and synthesize plausible inferences. *Prerequisite: A grade of B or higher in Introduction to Chemistry and Algebra I, concurrent enrollment in Algebra II, and teacher recommendation*

***Resources**: Modern Chemistry; Laboratory Manual Chemistry the Study of Matter*

I. **Required Materials**

- **a.** **Hard-bound composition notebook** for laboratory exercises – You will be expected to keep a formal record of your laboratory results from in-class activities and experiments.
- **b.** **Well-organized three-ring binder** for class notes, homework, tests, quizzes, and other handouts
- **c.** **Lined paper** for note-taking; **writing utensils**

II. **Rules & Expectations**

1. Come to class on time. I expect that you will be in your seat and working by the time the opening class bell rings. Student tardiness will result in an email home. Repeat offenders will be assigned after school detention.

2. Cellular devices are **prohibited** in class. If used, these devices will result in device confiscation for the period, and an after school detention at the teacher's discretion.

3. Food is not allowed to be consumed or in sight in class. Only sealed water may be consumed.

4. Bathroom breaks should be made during passing periods or during lunch, not during class. During independent work, only one student will be allowed out at a time (< 3-5 minutes), after signing out and taking the bathroom pass. In cases of emergency you may use the restroom or visit the nurse.

5. Follow all lab safety rules and procedures, and engage in socially responsible behavior in class.

6. Use respectful words, actions, and attitudes. **Respect people's differences.**

7. Always come to class with the required materials and completed assignments. Late assignments will not receive full credit (see **Section VI** on the following page for specific information).

8. In class, always work and participate to the fullest (to your comfort ability). Raise your hand at the appropriate time and wait silently—no talking out of turn. Be sure to give others a chance to participate as well.

9. Additionally, all students are always expected to follow all school rules as outlined in the school handbook, subject to appropriate disciplinary action.

III. Grade Calculation

Assignments/Homework/Reports -	10 %
Tests/Quizzes	50%
Labs/Lab Book Work	40%

IV. Absence Policy

a. Students are responsible for collecting all notes and assignments missed during an absence upon their return to school. Forms listing missed assignments will be provided in a designated area of the classroom. In accordance with school policy, students have **two** school days to make up work for each absence. Students must make up a missed test or quiz within a week of returning to school.

b. As per school policy, a total of **eight** absences for the semester will result in loss of course credit.

V. Late Work/Retesting

a. All assignments that are handed in late will receive **10%** reduction of the grade per they would have originally received if turned in on time. Remember to observe assignment deadlines, as there will be **no** full credit for late assignments (including assignments turned in **one** day late, or absentee make up work submitted beyond **two** school days after your return). Additionally, late unit assignments will only be accepted up until the unit test. After the unit has ended, no previous unit assignments will be accepted.

b. Opportunities for reworking unit tests/quizzes will be granted at the discretion of the teacher. You must first schedule an after school extra help session after you receive your test score. Retakes must be taken within one week of receiving the initial test score.

c. Rewrites/reworks for lab reports/written assignments may be granted at the discretion of the teacher. Any opportunity offered to one student must be made available to all students in an effort to maintain fairness.

VI. Cheating & Plagiarism

a. Cheating and plagiarism will simply not be tolerated. Students caught cheating or plagiarizing will receive a score of "**0**" on the assessment and further disciplinary action will be taken as necessary.

VII. Extra Help

a. I will be available to meet after school 1-2 days per week, unless otherwise noted (as announced in class, or posted on classroom door), or by appointment. Please check with me first to ensure I do not have a faculty or parent meeting scheduled at that time.

Note:

· If someone or something in class is preventing you from succeeding, please come see me at an appropriate time. We will work out the situation together. In the same respect, disruptive behavior will not be tolerated. Every student has the right to a respectful and effective learning environment. We are all here to learn and to help each other.

I believe in having an open line of communication between the classroom and home. E-mail is the easiest way to reach me, but please feel free to contact me via e-mail or by voice mail extension. Thank you for your time!

E-mail: drichardson@cohassetk12.org • **Voice mail:** (781) 383-6100 Ext. 2196

431 – Accelerated Chemistry

Course Expectations

· Upon completion of this course, students will be able to
· • Classify samples of matter from everyday life as being elements, compounds, or mixtures.
· • Explain the organizational structure (design) and communicate the usefulness of the Periodic Table to determine potential combinations of elements.
· • Use evidence/data from chemical reactions to predict the effects of changes in variables (concentration, temperature, properties of reactants, surface area, and catalysts).
· • Relate energy levels to configurations of atoms and molecules and relate transformations of energy to changes in these configurations.
· • Acquire a firm foundation in the principles of theoretical chemistry through a rigorous application of mathematics.
· • Write formulas and balance chemical equations in order to calculate quantitative relationships.

· • Explore real-life applications of a variety of chemical reactions (e.g., neutralization, oxidation-reduction, precipitation) and communicate findings/present evidence in an authentic written or multimedia form.

Unit outline for the course (subject to minor changes):

· Unit Conversion

· The Mole, Molar Mass

· Atoms, Chemical Formulas, and Chemical reactions

· The Law of Conservation of Mass

· Titration

· Solutions

· Acids & Bases, pH

· Stoichiometry and predicting reactions

Please sign below to confirm you have received this syllabus, and return this sheet to Dr. Richardson.

I have read and understood the class syllabus for this course, and agree to follow these expectations concerning class rules, procedures, and academic expectations.

_____	_____	_____
Student Name	**Student Signature**	**Date**

_____	_____	_____
Parent/Guardian Name	**Parent/Guardian Signature**	**Date**