### Course Syllabus: 2019-2020

1. **Instructor Information**

**Teacher**: Mr. Brian Martin

**Contact Information:** Please feel free to call, text, or e-mail me about any questions. If you call or

text before 10:00 pm I will try to respond that evening.

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1. **Course Description**

This course studies the composition and properties of matter. It includes topics like measurement, atomic structure, chemical bonds, chemical composition and reactions, gases, solids, liquids, solutions, chemical thermodynamics, chemical kinetics, acids, bases, oxidation and reduction, organic chemistry, biochemistry, and nuclear chemistry. A scientific calculator is required. Students will participate in weekly laboratory assignments. Students will also complete a long term chemistry project that will count for a large portion of their grade. This will culminate with a presentation at the science fair/grandparents day.

1. **Goals and Aims**
   1. Appreciate the law and order that governs the universe
   2. Be prepared for college level science classes
   3. Develop general problem solving abilities
   4. Encourage interest in scientific and chemistry related fields.
2. **Objectives**
   1. Understanding varying fields within chemistry and its application
   2. Demonstrate the factor label method
   3. Calculate accurately and precisely
   4. Diagram various theories on matter composition
   5. Classify elements
   6. Memorize element properties
   7. Apply stoichiometry
   8. Balance chemical equations
   9. Apply laws of energy and heat
   10. Fill electron orbitals
   11. Utilize the design process and a variety of resources (educational technology, information, materials, tools, machines) to safely and efficiently develop solutions to problems that require integration of concepts and skills from STEM disciplines.
   12. Apply the Laws of Thermodynamics
   13. Apply mathematical and scientific formulas, principles, reasoning, and precise language to predict outcomes and solve technological and engineering problems
   14. Apply course concepts by successfully completing lab demonstrations
   15. Complete a chemistry related research project
3. **Textbooks and Instructional Recourses** 
   1. *Chemistry: Precision and Design* – Abeka
   2. *Chemistry Laboratory Manual* – Abeka
   3. www.martinsclasses.weebly.com
   4. Material Safety Data Sheets
   5. Crash course chemistry videos
   6. Tyler DeWitt chemistry videos
   7. Chemsurvival Enterprises videos
4. **Equipment and materials**
   1. Scientific calculator: chemistry involves a great deal of math so you should bring a calculator to class every day.
   2. Notebook (This can be paper kept in your 3-ring binder)
   3. Three ring binder
   4. PPE
   5. Pen and pencil
5. **Course Requirements**

The prerequisites to this course are a …

* + 1. 70% or higher in Physical Science
    2. 70% or higher in Algebra I
    3. Basic computer and research skills

(Exceptions will be considered on an individual basis)

1. **Logistics**
   1. **Procedures and Expectations**
      1. Student should record assignments.
      2. Daily participation in chemistry is expected. We do a lot of calculations and problems together as a class.
      3. Keep a binder to organize all the course materials. (homework, class notes, pre-lab assignments, lab reports, quizzes, and tests)
      4. Attend class three days a week. I should be notified ahead of time if you will be absent.
      5. Absent students are responsible for all catch-up work.
      6. Students should be in their seats by the time the bell rings.
      7. Test and quizzes should be overturned and placed on the corner of one’s desk or handed in when finished.
      8. During instructional time students are expected to remain quite (except for relevant questions), take notes, and pay attentions. Students who engage in disruptive behavior will receive a verbal warning. A second offense may require that you stay for a chat at the end of class.
      9. When given in class work time collaboration among students is allowed. Communication is generally restricted to course material. Voices should stay at a whisper.
      10. All work should be done neatly and in an organized manner. Sloppy work may have to be re-done.
      11. Pay attention when other people are speaking.
   2. **Rules**
      1. School rules will be upheld in my classroom
      2. Students who have to leave class after the bell to retrieve classroom materials, get drinks, or use the restroom will receive an irresponsibility.
      3. Late homework will be penalized according to PVMS policy.

(I will overlook one late assignment and one irresponsibility point per quarter. (Late homework must still be completed))

* + 1. Respect school property, the teacher, co-students, and other’s time and resources.
    2. Maintain a positive attitude about life and learning.
    3. Laboratory rules are located on the student safety contract.
  1. **Class Logistics**
     1. **Homework:** Students will be given homework assignments to practice their skills. These assignments are crucial for students to expand their understanding, and will give both the teacher and student an opportunity to check comprehension of the material before moving on. Homework assignments will be discussed and checked the next day in class, giving students the opportunity to ask questions to further increase their understanding. Homework is due at the start of the class period. Each paper must contain a headings which include the student’s name and lesson/assignment/page numbers. **All homework must be done in pencil.**
     2. **Quizzes:** Quizzes help you and me determine how well you are mastering the material and what parts aren’t clearly understood. To receive full credit all work must be shown when applicable. Most quizzes will be announced, but some may be unannounced.
     3. **Notes Quizzes:** Every chapter will have a notes quiz near the end. They will include important concepts from the chapter. Student may use any notes taken in class to complete the quiz. You may not use your textbook.
     4. **Tests:** There are 12 tests throughout the year. They will be closed books, notes, and friends unless told otherwise. Test fix-ups: After a test has been returned and you would like to improve your score, you may ask me for a test make-up plan. If you follow the plan you can earn full credit for the fix-up. Plans may vary by test. Intermediate work, if needed, must always be shown to get full credit, even if you use a calculator. I generally give partial credit on tests for correct work even if the final answer is incorrect.
     5. **Projects:** This course requires the completions of a research project. More details will be given in the future.
  2. **Lab Logistics**
     1. Chemistry is a lab course, you will participate/complete one lab activity per week. Most lab activities have a pre-lab assignment and a post-lab report.
     2. Because of safety issues, I am extremely particular about students’ knowledge related to safety. We will go into detail about proper procedures. These must be followed with great care. A lab safety exam will be administered at the beginning of the year and a score of 100% is required to participate in labs.
     3. Labs need to be cleaned up before the end of class. No lab materials should be left on the floor or counters. Equipment should be cleaned and returned to the proper place.
     4. **Pre-Laboratory Activity**

Each prelab assignment must be completed before the weekly lab activity. It needs to include the following five components: 1) appropriate heading, 2) title, and purpose, 3) equipment and supplies (this includes PPE which you must ascertain from the MSDS sheets), 4) Risks associated with the equipment and supplies, 5) Pre-Lab assignment answers and/or solutions located in your lab manual.

* + 1. **Post-Laboratory Report**

Each lab report should be completed, torn out of your laboratory manual, and handed in by the following Monday at the end of the day.

1. **Methods**

A. Teaching Methods

1. Lectures 2. Demonstrations 3. Cooperative learning

4. Projects 5. Multimedia 6. Discussions

7. Field Trips

B. Assessment

1. Exams 2. Quizzes 3. Review 4. Homework

5. Projects 6. Presentations 7. Laboratory activities

1. **Grading Policies**

A. Tests 50% B. Homework 10% C. Projects 5%

D. Notes Quizzes 5% E. Quizzes 15% F. Pre-lab Assignments 5%

G. Lab Reports 10%