***Phillip O. Berry STEM Academy***

***Honors Chemistry I Course Syllabus***

*“Where students explore, investigate, hypothesize, experiment, collect data, analyze, reflect, and report while building an understanding of the intricate compositions of matter.*

WE ARE CHEMIST!

**Instructor:** Barbara A. Elam-Rice M. Ed, NBPT

Middle Grades Science Certification, Chemistry Certification

B.S./B.A. **North Carolina State University**

M. Ed in Curriculum and Instruction **University of North Carolina at Charlotte**

**Contact Information**

Phone: 980-343-5992

Email: [barbara.rice@cms.k12.nc.us](mailto:amandak.murphy@cms.k12.nc.us)

Weebly: pobchemteam.weebly.com

Availability: Tuesday afternoons 2:25-3:00

**Chemistry**

Chemistry is the [science](http://en.wikipedia.org/wiki/Science) of [matter](http://en.wikipedia.org/wiki/Matter), especially its properties, structure, composition, behavior, [reactions](http://en.wikipedia.org/wiki/Chemical_reaction), interactions and the changes it undergoes. Chemistry is sometimes called "[the central science](http://en.wikipedia.org/wiki/The_central_science)" because it connects physics with other [natural sciences](http://en.wikipedia.org/wiki/Natural_science) such as [astronomy](http://en.wikipedia.org/wiki/Astronomy), [geology](http://en.wikipedia.org/wiki/Geology) and [biology](http://en.wikipedia.org/wiki/Biology). Chemistry uses quantities like [energy](http://en.wikipedia.org/wiki/Energy) and [entropy](http://en.wikipedia.org/wiki/Entropy) in relation to the [spontaneity](http://en.wikipedia.org/wiki/Spontaneous_reaction) of [chemical processes](http://en.wikipedia.org/wiki/Chemical_process). It also explains the structure and properties of matter as a consequence of the physical properties of chemical substances and their interactions. For example, [steel](http://en.wikipedia.org/wiki/Steel) is [harder](http://en.wikipedia.org/wiki/Hardness_(materials_science)) than iron because its atoms are bound together in a more rigid [crystalline lattice](http://en.wikipedia.org/wiki/Crystalline_lattice); wood burns or undergoes rapid [oxidation](http://en.wikipedia.org/wiki/Oxidation) because it can react spontaneously with [oxygen](http://en.wikipedia.org/wiki/Oxygen) in a [chemical reaction](http://en.wikipedia.org/wiki/Chemical_reaction) above a certain [temperature](http://en.wikipedia.org/wiki/Temperature); sugar and salt dissolve in water because their molecular/ionic properties are such that dissolution is preferred under the ambient conditions. [Synthesis](http://en.wikipedia.org/wiki/Synthesis) is the major aspect that separates Chemistry from Physics and Biology as sciences. Chemistry includes the knowledge (science) to ***design*** and make more complex substances from simpler ones. These new substances might then be analyzed for their physical or biological properties. (Wikipedia, 2012)

**Course Goals**

The North Carolina Essential Standards for Chemistry are designed to enhance the student’s understanding of the science content that is vital for success in the twenty-first century. The process of scientific inquiry, experimentation and technological design should not be taught nor tested in isolation of the core concepts drawn from physical science, earth science and life science. A seamless integration of science content, scientific inquiry, experimentation and technological design will reinforce in students the notion that "what" is known is inextricably tied to "how" it is known. Phillip O. Berry’s Chemistry Team developed a well-planned science curriculum that provides opportunities for inquiry, experimentation, and technological design. When teaching science, our teachers provide opportunities for students to engage in “hands-on/minds-on” activities that are exemplars of scientific inquiry, experimentation, and technological design.

* Describe, explain, and predict natural phenomena.
* Understand articles about science.
* Engage in non-technical conversation about the validity of conclusions.
* Identify scientific issues underlying national and local decisions.
* Pose explanations based on evidence derived from one's own work.

**REQUIREMENTS OF HONORS COURSES**

* Students enrolled in honors courses will learn the material in the standard course of study for the course at greater depth than in the standard level version of the course. The support documents for the course include appropriate honors extensions by objective.
* Students enrolled in the honors version of the course will take the same EOC as students enrolled in the standard level version of the course.
* Students who choose an honors science course are expected to work more independently than students in standard level courses.
* Because students can be expected to cover the standard level material more independently there will be time for more enrichment topics as specified in the course descriptions for specific honors courses.
* Students who choose an honors science course will be expected to complete more independent in-depth scientific investigations and to report on them using a more formal scientific laboratory report format.
* Students who choose an honors science course will be expected to read and present orally and in writing recent scientific findings. Many of the materials and activities suggested for honors courses will also be appropriate for some students enrolled in standard level versions

**HONORS REQUIREMENTS**

* **STEM PROJECT:** 
  + **Honors students will be required to complete an independent study project outside of class time. As a part of this project students will also be required to write a formal lab report.**
* **FORMAL ASSESSMENT:** 
  + **Honors students will be required to answer short answer questions on formal assessments.**

**ESSENTIAL STANDARDS**

Chm 1.1 Analyze the structure of atoms.

Chm 1.2 Understand the bonding that occurs in simple compounds in terms of bond type, strength, and properties.

Chm 1.3 Understand the physical and chemical properties of atoms based on their position in the Periodic Table.

Chm 2.1 Understand the relationship among pressure, temperature, volume and phase.

Chm 2.2 Analyze chemical reactions in terms of quantities, product formation, and energy.

Chm 3.1 Understand the factors affecting rate of reaction and chemical equilibrium.

Chm 3.2 Understand solutions and the solution process.

For more information regarding state objectives for chemistry visit: <http://www.ncpublicschools.org/curriculum/science/>

**TEXTBOOK:** Glencoe Chemistry Matter and Change, 2004

An online version of the textbook is available. Refer to the chemistry website.

**COURSE REQUIREMENTS**

All prospective Honors Chemistry I students should have successfully passed Math I and Math II prior to Honors Chemistry I enrollment.

|  |  |
| --- | --- |
| **3rd Quarter** | **4th Quarter** |
| Atomic Structure  Electrons in Atoms  Periodic Table & Periodic Law  The Elements  Chemical Bonding  Chemical Formulas & Nomenclature  The Mole\*  Chemical Equations & Composition Stoichiometry\*  Nuclear Chemistry | Gas Laws\*  Gases and the Mole\*  Solutions  Acids, Bases, Salts\*  Reaction Rates  Nuclear Chemistry  Equilibrium |

**Course Outline**

**\*Math Chapters**

* **Midterm Exam** – March 14 – March 18
* **Report Cards** – April 13 & June 19
* **Final Exams -** June 3 – June 9
* **STEM Project** – April 15

**PROGRESS REPORT DATES:**

* + **February 23 – February 24**
  + **May 10 – May 11**

**\*\*All dates are subject to change.**

**REQUIRED COURSE MATERIALS**

The following materials are required for each student to bring to class.

You will need:

1. Scientific calculator (not graphing)
2. 3-subject spiral notebook. **Be sure to get the 8 ½ “ x 11” size.**
3. Highlighters
4. Pencils are required for all assignments with the exception of written lab data. Pens(blue/black **only**)
5. Colored pencils and/or markers
6. Scotch tape or glue stick

**Some materials will need to be replenished throughout the semester.**

**NICE TO HAVE MATERIALS**

1. Lysol or Clorox wipes
2. Hand sanitizer
3. Kleenex
4. Copy paper

**EXPECTATIONS DURING TEACHER ABSENCE**

1. Students should sit in their assigned seat.
2. Unless is there is an emergency, passes will not be written.
3. All assignments are due at the end of the class period. Failure to turn in part or all of the assignment will result in a zero (0). There will not be an opportunity to make up this grade.

**ASSIGNMENTS**

1. At the beginning of class each day, there will be a warm-up/focus activity. Students should begin the task without prompting from the teacher. All assignments should be labeled with the student’s name, period, and date in the top right corner of the paper.

Example:

Ginger Rice

2nd period

January 21, 2016 Assignment Name

1. When taking notes, the day’s topic should be written at the top of the paper.
2. All work should be neatly done. All non-math answers should be answered in complete sentences. Show all work for math problems **and** circle your answers.
3. All assignments should be written in pencil. Assignments written in pen (**only** exception…lab reports) will not be graded.

**HANDOUTS**

Each student will be provided with **one** copy of a handout. If the handout is misplaced or needs to be replaced, the student should print the handout from the wiki/Google drive.

**GRADE DISTRIBUTION**

The nine-week class grades will be calculated based upon the following:

**Formal Assignments:**

* Test
* Projects/Reports
* Stem Project

**Informal Assignments:**

* Quiz
* Homework
* Classwork

A semester final exam will be given. The exam will count as **20%** of your grade.

**GRADING SCALE**

A 90 - above

B 80-89

C 70-79

D 60-69

F 59- below

**HOMEWORK**

Homework checks will be randomly conducted, in one of the following ways:

1. Full grade may be given for doing all the assigned questions. Effort counts here.
2. Full grade may be given for answering all questions correctly.
3. Homework QUIZ

**CLASSWORK**

Classwork is due at the time specified by the teacher. Failure to turn in classwork will result in the grade of zero(0). Late classwork assignments will loose 10% each day after the assignment is due. Students who arrive late to class without a note excusing their tardy, will **not** receive additional class time to complete the assignment. The assignment must be made up after regular school hours.

**MAKE-UP WORK**

Make-up work from any absence is the student’s responsibility. There will be a folder that contains handouts from the missed day. I also suggest exchanging phone numbers with other students whom you may call to get missed assignments. Students will receive **five** school days to complete missed assignments. Late assignments will loose 10% of the earned grade each day after the assignment is due.

**CHEATING POLICY**

Any student involved in cheating on any assignment will receive a grade of zero (0). The participants may also receive a discipline referral to the administrative team and/counselors.

**ATTENDANCE**

1. Any student with more than ten (10) absences per semester for 4x4 classes, excused or unexcused, other than a principal-approved absence will receive a grade of “F” for the course based on CMS Regulation JHBB-R.
2. An absence prior to test day does not automatically excuse you from the test. This also applies to class assignments and quizzes. An extension of the test/due date for assignments will only be granted if a note is provided on the day you return to school excusing the absence. The absence must be considered an excused absence based on district policy.

**DISMISSAL**

When the bell rings at the end of class, students should remain seated. The teacher, including the substitute, will dismiss the class.

**PASSES**

Passes will not be written within the first or last 15 minutes of class. If a student needs to go to the restroom during class, the student should ask **only** during independent work time.

**AFTERSCHOOL TUTORING**

Tutoring will be offered to after school on Tuesday afternoons from 2:25-3:00. In order to participate, you must arrive on time. Late arrivals will not be allowed to enter without an excused pass from an administrator or teacher. Upon entering, sign-in on the online tutorial log. You must stay for the entire time to receive credit towards attendance recovery.

**TARDY POLICY**

All Chemistry courses will follow the school tardy policy as laid out by administration.

**INCLEMENT WEATHER**

If school is cancelled due to weather or other circumstances beyond control, check the Weebly or Canvas for assignments. It is the expectation that the assignment(s) are completed and turned in upon our return to school.

**Consequences**

1st tardy verbal warning

2nd tardy note sent to parent/guardian by student

3rd tardy call to parent and assigned a classroom consequence

4th or more tardiness referral to the appropriate administrator

**COMMUNICATION**

Both students and parents are encouraged to discuss any questions or concerns with me. I am able to accommodate communication by email, telephone, and conferences. You can also find information at pobchemteam.weebly.com. Grades are updated weekly on Parent Assist.

**DISCIPLINE PLAN**

**The EOC’s of Good Behavior**

**E**nter the room quietly and on time.

**O**rganize materials for the start of class.

**C**ourtesy & respect for others.

**‘s**tay in your seat until you are dismissed.

**Consequences**

1. Verbal Warning

2. Parent Contact

3. Parent Contact & classroom consequence

4. Referral to Administrator

**Rewards**

* Praise
* Positive Notes Home
* Various other positive perks
* The joy of learning

**CONTRACT/AGREEMENT**

I, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,(student's name printed) have read and understand the information contained in the HonorsChemistry I Syllabus.I realize that I must adhere to classroom rules and procedures as stated in the syllabus. I will make every effort to maintain high standards for both my behavior and academic efforts. I am aware that failure to adhere to rules and procedures may result in teacher and/or administrative consequences.

Student

Signature\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date\_\_\_\_\_\_\_\_\_\_

**Dear Parent or Guardian:**

You should be aware of the class rules and procedures that your student must adhere to in Honors Chemistry I. Please be sure that you read the information contained in this syllabus. Your signature on this contract indicates that you have read the Honors Chemistry I Syllabus and are aware of the rules and procedures of the course.

Parent/Guardian

Signature\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date\_\_\_\_\_\_\_\_\_\_

**As your teacher,** I will ensure that you are treated fairly and with respect. I will also provide you with assistance and resources to ensure success is maintained.

Teacher

Signature\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date 8/24/2015

**Maximum academic success can be achieved through collaborative efforts between the teacher, student and parent/guardian(s).**