Chemistry Syllabus

Mr. Johnathan Burnett

Aliquippa Jr. /Sr. High School

2015 – 2016 Academic Year

*To understand chemistry is to understand the world.*

**Course Objectives**: Chemistry is the study of matter and the changes it undergoes. Specific areas of chemistry covered in this course includes (not necessarily in this order!): Chemical Skills; Atoms, Molecules, and Ions; Stoichiometry; Types of Chemical Reactions; Solutions; Ionic Bonding; Covalent Bonding; Gases; Liquids and Solids; Thermochemistry; Atomic Structure and Periodicity; and Basic Organic Chemistry.

**Prerequisites:** It is assumed that students entering this course have received a passing grade in Algebra I and Biology I.

**Chemistry Texts:**

Davis, R. E., Metcalfe, H. C., Williams, J. E., Castka, & Castka, J. F. (1999) *Modern Chemistry*. Holt, Rinehart, and Winston: Austin, Texas.

**Additional Chemistry Resources:** There exists a wealth of Chemistry information online. Of particular value are the following resources:

[www.youtube.com](http://www.youtube.com) – many videos exist of experts explaining chemical concepts and demonstrating how to solve different types of chemical problems. Not usually the most fun to watch, but high quality videos can be found there. Also, more fun, are videos of different chemical experiments/explosions.

[www.khanacademy.org](http://www.khanacademy.org) – this is a great educational resource, not just for chemistry, but for all academic subjects. There are many videos created by teachers that explain many of the concepts we will study in this course.

[www.acs.org](http://www.acs.org) – website for the American Chemical Society. Information on the latest advances in chemistry, and how chemists are working towards “greener” solutions to the world’s energy and sustainability problems can be found here. Also here, under the education tab, is a wealth of resources for students, including articles on how chemistry affects daily living.

**Educational Texts:**

The following educational texts serve to guide my practice:

Armstrong, T. (2006). *The Best Schools: How Human Development Research Should Inform Educational Practice.* ASCD: Alexandria, VA.

Gorski, P. C. (2013). *Reaching and Teaching Students in Poverty: Strategies for Erasing the Opportunity Gap.* Teacher’s College Press: New York, NY.

Jenkins, L. (2004). *Permission to Forget: And Nine Root Causes of America’s Frustration with Education*. American Society for Quality: Milwaukee, WI.

Leonardo, Z. (2013). *Race Frameworks: A Multidimensional Theory of Racism and Education.* Teacher’s College Press: New York, NY.

Noddings, N. (2013). *Education and Democracy in the 21st Century*. Teacher’s College Press: New York, NY.

Nelson, J. L., Palonsky, S., & McCarthy, M. R. (2009). *Critical Issues in Education: Dialogues and Dialectics (*Seventh Ed.)*.* McGraw-Hill: New York, NY.

**Required Materials:** All students are expected to have the following materials for this course as soon as practically possible:

* **A 3-subject notebook or 3-ring binder with filler paper** – I will not provide paper for your note taking purposes. You are expected to be prepared for class.
* **A sturdy folder** (preferably one with hard, rigid outsides) – for storing textbook copies and other important documents. Note, only required if using a notebook rather than a binder.
* **A calculator** - some are available in the library for student use, but a calculator will be used in all your math and science courses from here on in your academic career. TI-82 or above is recommended
* **Safety Goggles** (optional) – The district does own enough safety goggles for everyone, and they are cleaned with a UV light to kill all bacteria after each use, but you are permitted to get your own. Any acceptable safety goggle must completely enclose the wearer’s eye area from all possible directions.

**Grading:** I will use the following methods and/or assignments to assess a grade in this course:

***Student Participation****:* You will earn a grade every day beginning August 25th for your participation in class. This grade is determined by how well you meet these criteria: The student is actively engaged in the lesson (this *does not* mean you have to say something to get these points!), the student is not distracting others from being actively engaged in the lesson, the student is prepared for class, and the student behaves appropriately for the class setting, including following school, class, and safety rules. A total of 225 points per grading period are possible in this category.

If you are absent, you will receive a mark of NA for that day’s participation until the participation make-up assignment is completed. The make-up assignment is to find a science-related (preferably chemistry) article and write a summary of the article. Include a copy of the article (or URL if located digitally) with the summary. Also include the date of your absence for which this assignment is to be credited. One make-up assignment will suffice for one day of absence. Once completed, the NA in the gradebook will be edited to reflect the quality of your make-up assignment.

***Homework:*** Much like athletics, music, or driving, one must practice chemistry to become “good at it”. The more frequent you practice, the more quickly you will be more proficient at your chemistry skills. Experts estimate that in order to master any skill, 10,000 hours of correct practice are required. *However,* I also understand that many of you are active with other school, church, or family obligations. Therefore, you will turn in all homework assignments for the week at the end of the week (usually Friday). Ideally, you will work little by little throughout the chapter on each night. *Please* *do not wait until the night before it is due to start your homework.* Homework packets vary in total worth, but will be based on a value of 10 points for each assignment that week. These points will be earned based on the level of completion of the assignment and the level of correctness of the assignment. After all, practicing the incorrect habits does you no good. However, as homework assignments are meant to be practice, a greater weight is given to completion over correctness.

***Notebooks:*** As I do anticipate a large amount of content and examples to be covered in the course, I will collect notebooks once every 9 weeks to assess the completeness of the notes, in addition to having ***all handouts, lab instructions, worksheets, and the periodic table***. Since chemistry is a cumulative course, I expect notes from the first 9 weeks to be present and in good order when I collect notebooks for the third 9 weeks, for example. The notebooks value will vary, but will also grow as you accumulate more content. Thus, the fourth 9 weeks notebook points available will be significantly greater in value than the first 9 weeks notebook points available. In an effort to not emphasize one grading period’s content over another, your grade will be the percentage of points earned from the notebook.

***Worksheets:*** Worksheets will periodically be assigned for further practice. Since worksheets will be given only after a topic has been reviewed, there will be a greater emphasis on correctness over completion. Some class time will be allocated towards working on the worksheets. Worksheets will be given at my discretion. You can expect multiple worksheets in every grading period.

***Laboratory Experiments:*** Laboratory experiments and experiences are exercises that are unique to the field of science. Most of what we know now is based on laboratory experiments, not on textbook learning. Therefore, successful and thoughtful completion of the laboratory experiment is critical to a complete chemical and scientific experience. The laboratory experience will be worth a total of 150 points each, with the goal of at least one lab every other week. These lab experiences will be comprised of two components: lab participation and the lab report. Every laboratory activity will be accompanied by a lab report. A rubric for grading the lab report and activities, as well as an exemplary example will be provided prior to the first laboratory experiment. As the reports are to be typed, some class time after the lab period(s) will be allocated to use of the computer lab. Your lab reports will be submitted electronically, and feedback submitted electronically using googledocs. This will allow you to work on your lab report anywhere you have internet capabilities. This will require you to have an account with google (it is free). If you already have one (such as a gmail email address), please be sure that you know your password prior to entering the lab for our first lab report.

***Quizzes:*** Quizzes will be given every Friday, beginning September 4th. Quizzes are worth 10 points each. Completion of every question on the quiz is expected.

***Exams:*** An exam will be given at the end of every chapter. There will be at least one exam, but probably two, every grading period. Exams are worth 100 points, and will use many different types of questions to assess your mastery of the content. Completion of every question on the exam is expected. Remember, exams are your opportunity to show me what you know! You will be allowed to use your periodic table and a calculator (preferably graphing) only on every exam.

***Any question left blank or with an answer that purposely evades the question will result in a zero grade for the entire assignment!***

***Projects:*** Projects will be assigned at my discretion. A complete explanation of how these projects will be graded will be given when I assign the project. These projects will vary in nature (i.e. written report, creative project, multi-step problem, etc.), scope (length), degree (level of difficulty), and level of cooperation with your peers. The number of points available in these projects will be based upon the aforementioned details. You can expect at least one project every quarter.

Each of these assignments will be weighted to calculate your final grade using the following percentages:

33.3%: Exams and Quizzes

33.3%: Laboratory Experiences and Projects

23.4%: Homework, Worksheets, and Notebooks

10.0%: Daily Participation

Letter grades will be given based on the percentage of total points earned to total points available utilizing the weighting above. This percentage will be converted to a letter grade based on the following scale:

A = % > 89.5% D = 59.5% < % < 69.5%

B = 79.5% < % < 89.4% E = % < 59.5%

C = 69.5% < % < 79.4%

**Final Exam:** My final will consist of three portions as detailed below:

**Written Exams** – You will take two cumulative exams – a midterm and a final. The final will include items tested on your midterm (simply by the cumulative nature of the course).

**Laboratory Demonstration** – You, with you lab group, will demonstrate a laboratory experiment of your choosing, with the expectation that you will not only safely conduct the demonstration, but also explain the chemistry concepts behind why the demonstration occurs as performed. More details on this will be provided as we get closer to the end of the year.

**Portfolio**  - You will complete a portfolio highlighting your learning throughout the course of the year. Several examples demonstrating your learning progress will be required, as well as self-reflections for each artifact. I would encourage you to keep all graded material for consideration as an artifact. We will have several “portfolio days” throughout the year to assist you in compiling a satisfactory portfolio as well as to give guidance towards what artifacts you should consider.

Each of these portions will be given equal weight towards your final exam grade. It is not possible to be exempt from the final.

**Classroom Policies and Procedures:**  The following policies and procedures will be strictly followed and enforced.

***Overall Classroom Expectations:*** My expectations are fairly simple, and can be summed up in four phrases: *Be On Time, Be Respectful, Be Prepared, and Be Engaged*. All of the following rules are how I believe that following these rules will look like for every student.

***Materials:*** Students are expected to bring a writing utensil (preferably a pencil), and notebook to every class session unless instructed otherwise. ***No passes*** will be issued to retrieve any items. In addition, if you are not prepared for class (i.e., if you do not have the above materials), your participation grade for that day may be effected.

***Homework:*** Practice is necessary in chemistry, so expect to have homework often. Homework is due at the beginning of the class session at the end of the school week after it is assigned, and is to be turned in via the indicated bin for each class.

***Attendance:*** Every student is expected to come to class on a daily basis. Simply put, if you are not in class, you cannot learn the content. Furthermore, chemistry is a topic which builds upon itself throughout the course, so if an excessive amount of absences occur; their likelihood of success in the course suffers. There is an assigned seat for every student in the class. Every student is expected to sit in their assigned seat every day upon entering the classroom. I will take attendance from the seating chart, so any student not properly seated will be marked absent. **The procedure regarding absences as outlined in the student handbook will be strictly followed.**

***Tardiness:*** If students are not in the room when the bell rings they will be considered tardy. Furthermore, if a student is not in their assigned seat ready for the start of class within 30 seconds of the bell, the student will also be marked as tardy, as they are impeding the progress of the class. A pattern of excessive or consistent tardiness will result in disciplinary action. If you are tardy to my class, do not come without a note from the teacher you were most recently with, or you will not be admitted to class. In short, be respectful of my right to teach, and your classmates’ right to learn by being on time.

***Hall Pass:*** The hall pass is only to be used in the case of ***extreme emergencies.*** At no time will there be more than one student out on the hall pass. As there is a restroom within 200 feet of the classroom, a strict time limit of 5 minutes will be imposed. Any student who exceeds this time limit will forfeit their participation grade for the day. Each student is expected to sign in and out in order to use the hall pass, and failure to do so constitutes a forfeiture of hall pass privileges. If there are extenuating circumstances where this policy is an issue, a note to me from the parent/guardian of the student, detailing why this policy will not work for their child is expected promptly. If the issue is medical, it will be verified through the school nurse.

***Lab Procedure:*** During the course of our laboratory experiments, we will be using chemicals that, if used in a manner other than prescribed in the lab procedures, may cause moderate to severe injuries. In addition, this classroom is unique in its design, as it has several necessary safety elements incorporated. Any misuse of said safety equipment, chemicals, or disregard for the following laboratory rules will result in the forfeiture for that student of any laboratory experiment, and thus will receive a grade of zero for the labs, in addition to any disciplinary action recommended by the administration. The following basic laboratory rules are for your safety!

1. Safety Goggles must be worn at all times. I know it’s not cool. Suck it up. I’d rather you be a temporary science nerd than blind!
2. No eating or drinking during the lab procedure. Ever. Period.
3. The shower and eye-wash stations are to be used in the case of extreme emergency only. Don’t play with them, as their use creates additional safety and building maintenance issues. ***Misuse of these pieces of equipment will result in a 5 suspension***.
4. No overly loose clothing or jewelry may be worn in the lab. Only shoes that protect the entire foot are permitted. Any hair that is shoulder length or longer must be secured during the lab.
5. No horseplay in the lab. Not that you shouldn’t have some fun, but horseplay is unacceptable, as it creates an unsafe laboratory environment for you and those around you.
6. Follow the safety rules outlined in the attached labs safety guidelines.

***Laboratory Equipment:*** Laboratory equipment will occasionally break. However, if a pattern of repeated disregard for the equipment is discerned, the student will be asked to pay our replacement cost for the equipment. Additionally, any student who breaks equipment while breaking one of the laboratory safety rules will also be asked to pay our replacement cost for the equipment. Failure to remit payment to me in a timely manner will result in a financial obligation.

***Make-up Policy:*** Tests, quizzes, and labs can be made up by appointment only. Please do not stop by afterschool without first informing me of your intent to make up an assignment, as I will simply ask you to make an appointment. ***Retrieving missed work is the student’s responsibility****.* All assignments will be listed on classroll in a timely manner. In addition, **assignments are due on the day announced, regardless of your presence in class on the due date**. Exceptions for school activities and family emergencies will be on a case-by-case basis. Be organized and make sure you can get the assignment to me on time.

***Extra Credit:*** Extra credit will be given only for (1) going above and beyond your responsibilities as a student to assist me or your classmates or (2) for representing your school and community in a positive manner through extra-curricular/ athletic activities. To receive the extra-curricular/ athletic extra credit, a note from your coach/sponsor confirming your membership at the beginning and end of the activity’s season will be required. This extra credit will be given in the grading period in which the activity primarily occurs. No other opportunities exist. Do not ask. More than enough easy points are available through the participation and homework grades to offset a poor performance on an exam, lab, or project.

***Extra Help:*** I am available for extra help in my room after school by appointment. If you do plan on stopping by for extra help, please check with me just to ensure I will be there. I am involved with extra-curricular activities, doctoral studies, and have two young children at home and do not want to waste either your or my time. I strongly encourage you to come for some extra help at the first sign of difficulty**. *Please do not wait to the end of the grading period for help!***  The longer you wait, the further behind you will fall.

***Missing Work:*** If you don’t know if you are missing assignments, it is ***your responsibility*** to log on to classroll and look. For any assignment not turned in on time, you have **5 school days** from the due date to complete and turn in the assignment. If you can’t be bothered to complete the assignment in a timely manner, I won’t be bothered grading it. Late assignments will receive half the value they would have received had they been on time for each day late. Thus if the assignment is 1 day late – 50%, 2 days late – 25%, 3 days late 12.5%, 4 days late – 6.25%, 5 days late – 3.13%, >5 days late – 0%. Thus, it is strongly encouraged that you complete your assignments on time.

***Substitutes:*** Any and all substitute teachers are to be treated with the utmost respect at all times. Any work assigned by the substitute teacher is worth twice its normal value, and likewise any punishment given by the substitute teacher will be doubled by me. If a negative report for a student or class as a whole is given, everyone mentioned will lose double participation points, thus eliminating points earned when I am present. Similarly, if a positive report for a student or class as a whole is given, providing the student was prepared for class, double the earned daily participation points will be awarded.

***Any work given by a substitute teacher will be worth double its normal value and is due to that substitute teacher unless instructed otherwise!***

***Thermostat***: I strive to keep the temperature of my classroom at a consistent temperature year round. The primary reason for this is student safety. The thermostat in my room also controls the chemical stock room. There are many chemicals there that are sensitive to temperature changes, especially exposure to heat. Some of these chemicals may react violently (aka, explode) to increases in temperature. Thus, for everyone’s safety please do not adjust the thermostat to suit your needs. Students caught tampering with the thermostat will be subject to discipline as described above. If you know that the room temperature is not to your liking, plan ahead and dress appropriately.

**Student Discipline Policy:**

Students who conduct themselves inappropriately will have the following consequences:

1. A verbal warning and loss of half of the participation points for that day.
2. I will call home to address your behavior with your parents/guardians, and a loss of the remainder of the daily participation grade.
3. The discipline report is submitted to the office at the end of the day. In addition the student will be sent to an administrator.

The Aliquippa Jr. Sr. High School Handbook will serve as the guidelines for all activities not addressed in this syllabus, and will be enforced at all times.

**Teacher Contact Information:**

If you need to contact me, you may do so through the following media:

Phone: (724) 857-7500 x4206

Email: jburnett@quipsd.org

***Syllabus Acknowledgement Form***

**Please complete and return this sheet to Mr. Burnett**

By signing below, I verify that I have read and understand the syllabus for Mr. Burnett’s Chemistry classes for the 2014 – 2015 Academic Year at Aliquippa Jr./ Sr. High School. I further acknowledge, with my signature, that I agree to the rules and safety procedures as outlined in this document.

Failure to return this sheet to Mr. Burnett will result in the student being unable to participate in laboratory experiments, and thus receiving a grade of zero for those assignments, due to safety rule compliance issues.

Student’s Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student Signature: ­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Parent/Guardian’s Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Parent/Guardian Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_