BASIS.ed™

COURSE SYLLABUS 2019/2020

CHEMISTRY 7

School: BASIS Chandler

Instructor: Peter Delannoy

Email: peter.delannoy@basised.com

Course Description

Students will deepen their understanding of the chemistry concepts learned in sixth grade. Students will practice using the language and nomenclature of chemistry in measurements and with the representation of chemical reactions using balanced chemical equations. Students will also apply mathematics to solve numerical problems relating to the application of chemical concepts. Students in this course will attain this in-depth knowledge through hands-on laboratory activities .

Grading Policy

Each trimester the students will be assessed based on graded labs, quizzes, tests, and lab practicals (written and practical). The breakdown for the trimester grades is as follows:

Exams, Lab Practical Written Exams, Final Exam Graded Labs - 20%

Quizzes, Graded Labs - 80%

Exams and practical exams are comprehensive, meaning that each subsequent test will have questions from previous concept areas. The Pre-Comprehensive Exam Score will count as 30% of a student's grade for Trimester 2. The Final Course Grade is the average of the cumulative Course Average after the last grading period (50%) and the Comprehensive Exam Score (50%). The grade for the course is calculated according to the rules established in the Parent-Student Handbook.

Classroom Policy

A. Class Organization

Students should enter the classroom prepared to learn. Each student is responsible for bringing a notebook and a binder or folder for handouts and other papers. Students should also bring a dry-erase marker and eraser, pencil, pen, **scientific (non-graphing or non-programmable) calculator**, periodic table, and good attitude to class every day.

All notes, handouts, lab notes, and old assessments should be saved to review for each exam and lab practicals as well as the comprehensive exams. It may be helpful for students to keep a 3-ring binder or folder at home to file these items for comprehensive exam review. All handouts, vidoes, and other related documents or media will be stored at Chemistry 7 (2019-2020), www.chemdoctor.org [http://www.chemdoctor.org] .

B. Missed Exams, Quizzes, and Labs

It is the student’s responsibility to schedule make-up exams, quizzes and labs with the teacher. Exams, quizzes, and labs can be made up after school during the student hour Mondays, 3:40-4:40 p.m.. Exams and quizzes not made up by the end of the trimester will be entered as a zero. Students will be given at least five days written advanced notice on exams. Quizzes are meant to frequently test

student knowledge and may be announced or unannounced and may also occur prior to laboratories or prior to lessons.

Students should make every effort to attend class when a lab is being conducted. Students who miss a lab may make up the lab after school during student hours.

C. Student Responsibilities Regarding Assignments

It is the student's responsibility to keep track of assignments and assessments in their **communication journal** and are required to check **Chemistry 7 (2019-2020) on www.chemdoctor.org [http://www.chemdoctor.org]** everyday to confirm the assignments in their CJ, find handouts, video assignments, white board problems and answers, reminders of test dates etc.

Students must follow instructions and put their name on all tests, quizzes, and graded labs in order to receive full points. Failure to follow directions (for example, not showing work on a problem) or turning in a no-name paper will result in a loss of points. The number of points lost will vary based on the point value of the assignment.

It is the students responsibility to arrange retakes of quizzes, tests, graded labs, etc. **Retakes CANNOT be arranged by email!** The student must come to my room and make the arrangement with me directly.

D. Honor Code

Unless otherwise instructed by the teacher, students may work together in groups but must turn in their own work. See BASIS SCHOOL Handbook. Students must do their own work and will be penalized for cheating if their work is discovered to be extraordinarily similar to another student's. A student who is caught cheating on a test, quiz, lab write-up, or other assignment will earn a zero grade on the assignment or assessment.

Students are expected to work in such a way as to minimize distractions to other students. Students who feel that their learning is hindered by another student's behavior are encouraged to talk to the teacher. Students are required to behave in a manner that is respectful to both the teacher and other students. Any behavior that is considered offensive, belittling, rude, or crass will not be tolerated as stated in the Parent-Student Handbook. The teacher reserves the right to send the student to the office for disciplinary action or to remove the offending students from any group work.

A teacher's classroom relies on student involvement and collaboration. Behavior which hinders the creation of an environment where all students are respected and listened to will not be tolerated.

E. Calculator

A scientific calculator is required. I recommend the TI-30XIIS or similar. **Programmable or graphing calculators are not allowed**. Calculators will not be provided for students who arrive ill-prepared for activities or assessments requiring calculators. Failing to have a calculator when it is required during class work will impact the student's participation grade.

F. Cell Phones

Cell phones are not allowed in any chemistry class. They must remain stowed inside the student's locker. If a cell phone rings during class or becomes visible, the cell phone will be confiscated. Parents can reach students during an emergency through the school office. Cell phones are not allowed as calculators.

G. Syllabi Changes

The order of content may change and non-mandatory topics (those not covered on the pre-comprehensive or comprehensive exams) may be omitted due to time constraints. New content related to the course may be introduced at any time. New rules may be introduced as well. New rules may be announced verbally, written on the board, and/or provided as a written supplement. Rules for laboratories will be presented prior to the laboratory.

H. Lab Safety

Because safety is paramount in the lab, each student MUST arrive for lab days fully prepared. The student will have a baggy T-shirt to put on over nice clothes and may want to have a preferred set of safety glasses in their locker for lab days. I reserve the right to remove students from the lab for violations of safety practices.

I. Individual Work

It is the student's responsibility to turn in their own unique work for individual assignments – even assignments (such as labs) that are part of a group project.

J. Classroom Expectations

Students are expected to follow the classroom expectations for chemistry each day. These expectations are 1) Be honest and kind, 2) Be safe, 3) Do your best.

K. Statement of Assurance

This course has been aligned to the Arizona Academic Standards.

Instructional Materials

The chemistry 7 class has a link called Chemistry 7 (2019-2020) found at www.chemdoctor.org [http://www.chemdoctor.org]

All class materials are found at this link. Students are required to visit this link everyday to stay updated on the course and to confirm assignments and test dates that are in their CJ. Assignments and weekly topics will usually be posted Monday of each week. Updates can also include new video assignments, white board uploads, and laboratory information.

School Supplies

baggy T-shirt

pencils and pens

non-programmable calculator

white board markers

binder

dedicated notebook for chemistry

Other Information

Email: peter.delannoy@basised.com [mailto:peter.delannoy@basised.com]

Tutoring Hours: Monday 3:40-4:40 p.m.

Parent Hour: Friday 2:00-2:50 p.m.

Parent Appointments: Email me directly for questions or to schedule a meeting.

Syllabus Review & Signature

This paper must be signed and dated by both the student and the student's parent/guardian to signify that the rules and regulations have been read and understood.

Student Name (Please Print)_____

Student Signature_____ Date_____

Parent/Guardian email address_____

Parent/Guardian Name (Please Print) _____

Parent/Guardian Signature_____ Date_____

Parent/Guardian email address_____

Parent/Guardian phone number_____

Syllabus Outline Lesson Units

Unit 1: Laboratory Safety, measurement and significant figures

Students will review and learn the following.

- Help students develop an understanding of the principles of chemical safety.
- Foster a culture of safety in which students apply the safety by wearing closed toed shoes, goggles and long pants.
- Express measurements using appropriate significant figures.
- Determine the number of significant figures in a measurement or reported number.
- Determine the number of significant figures in the result of a given calculation (multiplication and division only).
- Perform hand-on activities to read and write measurements using appropriate significant figures with units.

Unit 2: Matter: Types and properties of matter

Students must be able to

- Classify matter according to its composition.
- Define the terms element, and compound, and recognize them pictorially.
- Classify the properties in matter.
- Define isotope
- State law of definite proportion and law of multiple proportion.
- Recognize mixtures and develop a method of separating two substances in a given mixture.

Unit 3: Matter: States of matter

Students must be able to

- Describe the characteristics of solids, liquids and gases using particles and their arrangement.
- Describe the process of how the arrangement of particles in solid, liquid and gas changes during phase changes.
- Relate temperature to the kinetic energy of the particles.
- Explain the difference between heat and temperature.

States of matter(7th)

Unit 4: Periodic table and trends

Students must be able to

- Describe the information in and the organization of the periodic table.
- Know the shapes of s,p,d and f orbitals.
- Understand the connection between the periodic table and the electron configurations of atoms.
- Write the electron configuration (long and short form) for the first 20 elements.
- Identify the name, symbol, valence electrons of the element or ion based on the given electron configuration.
- Predict relative atomic sizes, and ionization energies of elements based on periodic trends.
- Compare the size of the ion formed with its neutral element.

Unit 5: Chemical Bonding

Students will be able to

- Use the periodic table and ion charges to write chemical formula of ionic compounds.
- Name ionic compounds and write chemical formulas of ionic compounds including type(I) and type(II) cations.
- Learn and write the formulas of ionic compounds containing polyatomic ions.
- Understand the difference between ionic and covalent compounds.
- Name covalent compounds using prefixes.
- Write Lewis dot symbols for individual atoms using dots arranged around the symbol to represent the electrons in the outermost energy level of an atom.
- Construct Lewis structures for diatomic elements.
- Draw Lewis structures for covalent compounds. Practice with the following combination of elements: H,C,N,O,P,S and halogens.

Pre-comps Review

Students will review for the pre-comprehensive exam during this week.

Tips for chemistry precomps

Precomprehensive Exam

Students will take the pre-comprehensive exam in this week.

Unit 6: Chemical reactions and stoichiometry

Students will be able to

- Balance chemical equations by manipulating coefficients.
- Identify the names of the given chemical reaction as synthesis, decomposition, combustion, precipitation and acid-base.
- Predict the products of combustion of hydrocarbon and combustion of metals.
- Predict the products of synthesis of a binary ionic compound.
- Predict the products of decomposition of hydroxides and carbonates.
- Determine the mole ratios between different compounds within the balanced reaction.
- Perform calculations involving moles of reactions and products in a chemical reaction.
- Calculate the amounts of reactants or products using molar mass, mole ratios in a given chemical equation.
- Define limiting reactant.
- Identify the limiting reactant using the particle diagram representation in a chemical reaction.
- Explain and calculate the theoretical yield of the product formed from the given amounts of reactants.
- Solve for percent yield using the formula for a given chemical reaction.
- Perform laboratory activities to explain how the mole and Avogadro’s number serve as conversion factors between the molecular

and laboratory scales of matter.

Unit 7: Solution Stoichiometry

Students will be able to

- Determine molarity using the moles of the given substance and the volume in Liters.
- Predict the products of acid-base reactions as salt and water.
- Perform a titration of a strong acid strong base reaction.
- Write the complete and the net ionic equations for the precipitation reaction.
- Predict the products of the precipitation reaction using the solubility rules.

Comprehensive exam review week

Students will review for the comprehensive exam during this week.

Comprehensive Exam

Students will take the comprehensive exam this week.