

Chemistry

Class Location: 212 Annex

Instructor: Dr. Mitzy Hall

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Required Text & Materials:

Chemistry: The Study of the Composition of Matter and the Changes that it Undergoes

Course Description

Chemistry is an inquiry based course that examines matter and the changes it undergoes. Experiment and activities are used to introduce concepts including the structure of atoms and chemical compounds, the relationships among the elements on the periodic table, chemical and physical transformations, and the measurement and calculations of chemical quantities. Students who complete this course will develop an understanding of interconnections among the sciences, technology, society, and the environment.

Materials (Daily):

CHROMEBOOK (you may not share this item)

Composition Notebook (For Chem notes Only)

Colored Pencils or Markers GET THESE ASAP. Used for notes and tests

4 different colors of Expo markers

Pencil

Scientific Calculator (you may check one out if you do not have one) First come first serve

3 ring binder with clear pocket in front

Box tissue

Dishwashing liquid

Box of quart or sandwich Ziploc bags

Course Topics in Order:

1. Matter
2. Atomic Structure
3. Electrons
4. Periodic Table
5. Bonding
6. Nomenclature & Formulas
7. Chemical Reactions
8. The Mole/Stoichiometry
9. States of Matter
10. Gases
11. Solutions (Acids/Bases)
12. Thermochemistry
13. Reaction Rates/Equilibrium
14. Nuclear Chemistry

Course Structure:

Lecture, group work, activity and lab-based.

<http://www.gpb.org/chemistry-matters>

Student Learning Outcomes

Standards/Objectives:

A. Matter properties and change

Chm.1.1 Analyze the structure of atoms and ions.

1.1.1 Analyze the structure of atoms, isotopes, and ions.

1.1.2 Analyze an atom in terms of the location of electrons.

1.1.3 Explain the emission of electromagnetic radiation in spectral form in terms of the Bohr model.

1.1.4 Explain the process of radioactive decay by the use of nuclear equations and half-life.

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

1.2.1 Compare (qualitatively) the relative strengths of ionic, covalent, and metallic bonds.

1.2.2 Infer the type of bond and chemical formula formed between atoms.

1.2.3 Compare inter- and intra- particle forces.

1.2.4 Interpret the name and formula of compounds using IUPAC convention.

1.2.5 Compare the properties of ionic, covalent, metallic, and network compounds.

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

1.3.1 Classify the components of a periodic table (period, group, metal, metalloid, nonmetal, transition).

1.3.2 Infer the physical properties (atomic radius, metallic and nonmetallic characteristics) of an element based on its position on the Periodic Table.

1.3.3 Infer the atomic size, reactivity, electronegativity, and ionization energy of an element from its position in the Periodic Table.

B. Energy: Conservation and Transfer

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

2.1.1 Explain the energetic nature of phase changes.

2.1.2 Explain heating and cooling curves (heat of fusion, heat of vaporization, heat, melting point, and boiling point).

2.1.3 Interpret the data presented in phase diagrams.

2.1.4 Infer simple calorimetric calculations based on the concepts of heat lost equals heat gained and specific heat.

2.1.5 Explain the relationships between pressure, temperature, volume, and quantity of gas both qualitative and quantitative.

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

2.2.1 Explain the energy content of a chemical reaction.

2.2.2 Analyze the evidence of chemical change.

2.2.3 Analyze the law of conservation of matter and how it applies to various types of chemical equations (synthesis, decomposition, single replacement, double replacement, and combustion).

2.2.4 Analyze the stoichiometric relationships inherent in a chemical reaction.

2.2.5 Analyze quantitatively the composition of a substance (empirical formula, molecular formula, percent composition, and hydrates).

C. Interactions of Energy and Matter

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

3.1.1 Explain the factors that affect the rate of a reaction (temperature, concentration, particle size, and presence of a catalyst).

3.1.2 Explain the conditions of a system at equilibrium.

3.1.3 Infer the shift in equilibrium when a stress is applied to a chemical system (Le Chatelier's Principle).

Chm.3.2 Understand solutions and the solution process.

3.2.1 Classify substances using the hydronium and hydroxide ion

3.2.2 Summarize the properties of acids and bases.

3.2.3 Infer the quantitative nature of a solution (molarity, dilution, and titration with a 1:1 molar ratio).

3.2.4 Summarize the properties of solutions.

3.2.5 Interpret solubility diagrams.

3.2.6 Explain the solution process

You will meet the objectives listed above through a combination of the following activities. Attend class daily.

Complete the assigned homework and worksheets and participate in lab based experiments.

Topic Outline/ Schedule

*SEE back of syllabus

Grading Policy: Assignments will be weighted as follows for your 9 weeks grade:

-Exams/Test//presentations ———— 40%

-Quizzes/ Class participation ———— 20%

-Classwork/Homework ——— 20%

-Labs/Projects ———— 20%

All grades will be posted weekly in ASPEN and a progress report will be handed out as needed.

All Assignments are due at the beginning of class on the assigned date. Assignments turned in ONE day late will receive no higher than HALF CREDIT and after ONE DAY, late work will not be accepted.

Each 9 weeks grade is worth 42.5% of your final grade with the semester test being worth 15% of your final grade.

Letter Grade Percentage Performance

A 90-100% Excellent Work

B 80-89% Very Good Work

C 70-79% Above Average Work

D 60-69% Below Average Work

F 0-59% Failing Work

Course Policies

Attend Class

Students are expected to attend all class sessions as listed on the course calendar.

- Class participation is expected and part of your grade. You can NOT receive participation if you are absent.

Participate

*I will keep track of your attendance, tardies. & leave earlies. As long as you are in attendance, not tardy or leave early, keep cell phone off and in holder, stay awake, take notes etc. you will receive full participation points. If you are tardy, leave early, sleep, cell phone out, out of dress code, refuse to complete class work you will lose your daily points.

If you find that you have any trouble keeping up with assignments or other aspects of the course, make sure you let your instructor know as early as possible. As you will find, building rapport and effective relationships are key to becoming an effective professional. Make sure that you are proactive in informing your instructor when difficulties arise during the semester so that they can help you find a solution.

Complete Assignments

Assignments must be submitted by the given deadline or special permission must be requested from instructor before the due date. Extensions will not be given beyond the next assignment except under extreme circumstances.

ALL ASSIGNMENTS ARE to be turned in Individually. Meaning not with 2 peoples name on it.

All discussion assignments must be completed by the assignment due date and time.

Late or missing discussion assignments will effect the student's grade.

If you are absent the day an assignment is due you MUST turn in the assignment the day you return to school. If you miss a test you have 5 days to make the test up and it must be taken BEFORE or AFTER school. (Not during school time cause you are just getting even farther behind in class).

SNOW Days : Looking at syllabus everything will move back a day for when the assignment is due---unless otherwise stated when it is assigned.

Classroom Procedures:

1. Cell phone use is GENERALLY and ALWAYS is not allowed in the classroom. They need to be turned off prior to the beginning of class and placed in the cell phone holder at front of class.
2. All students will show proper respect to others at all times, and will respect varying opinions.
3. Profanity of any sort will not be tolerated, and will be treated as a disruption to the class. This includes any clothing, jewelry, etc. that is profane in nature.
5. Cheating of any kind will not be tolerated. If an individual cheats, he/she will receive a zero for the test/project, and appropriate action will be taken.
6. All CCHS and Cocke County Schools Rules and procedures apply. Read your handbook thoroughly.

Academic Integrity/ Dishonesty:

Academic dishonesty is the giving, taking, or presenting of information or material by a student with the intent of unethically or fraudulently aiding oneself or another on any work which is to be considered in the determination of a grade or the completion of academic requirements. It is expected that all members of the school community will work to actively deter academic misconduct and thus will share in the responsibility and authority to challenge and make known to the appropriate authority acts of apparent academic dishonesty.

1. Violations

A student shall be guilty of a violation of the Academic Dishonesty Policy if he or she engages in act(s) of:

- a. Facilitating Academic Dishonesty. Such conduct includes, but is not limited to, giving unauthorized assistance to another in order to assist that person in cheating or plagiarizing.
- b. Attempt. Such conduct shall include, but not be limited to, attempting any act that if completed would constitute a violation as defined herein.
- c. Cheating. Such conduct includes, but is not limited to, a student receiving unauthorized aid or assistance on any form of academic work.
- d. Falsification. Such conduct shall include, but not be limited to, the unauthorized changing of grades or conduct involving any untruth, either spoken or written regarding circumstances related to academic work.
- e. Plagiarism. Plagiarism includes, but is not limited to, copying the language, structure, ideas and/or thoughts of another, without giving appropriate recognition and/or adopting the same as one's own original work intentionally or unintentionally.
- f. Double Dipping. Submitting the same or similar assignment to multiple instructors, for multiple classes, without prior permission for each instructor.

2. Consequences

A student found guilty of academic dishonesty will receive a grade of zero on the assignment, test, project, etc. Depending on the severity and number of occurrences, the following actions may also be taken:

- Parent Contact
- Detention
- Modified assignments/ submitting of class work
- Required project on academic dishonesty
- Admin Referral

Tutoring: Tutoring will be available alternating Monday/Wednesday mornings.

Attendance: In accordance with state guidelines, a student may miss no more than 5 unexcused class periods in order to receive credit for the course. Students have 3 days to make up any work missed during an absence. It is the student's responsibility to inquire about assignments missed during absence. Whenever possible, students should give adequate notice that they will miss class. If a student is absent on the day of an announced test, the student must make up the test the day they return. In most cases, students will not be allowed to make up tests/ quizzes during class time.

Homework: Homework will be a central part of this course. All assignments will be due and turned in upon entering the room. It must be turned into the box by the time the tardy bell would ring, or it will automatically lose 10 points.

Tardiness: It is important that you are in your seat when class begins. It is your responsibility to keep track of time as there are no bells. You must be in your seat by the time the tardy bell would ring or you are considered tardy. 1st tardy will result in a warning. 2nd tardy will result in a phone call home. 3rd tardy will result in a detention and phone call home. 4th tardy will result in an administrative referral.

Eating and Drinking: No eating will be permitted in the classroom. Students may have a bottle of water if the lid can be closed. All other beverages will be thrown away.

Absences: If you are absent from class, it is your responsibility to find out what you missed. Check syllabus first and then if you have any questions, see me before or after class. If you are absent the day something is due it is due the day you return.

Evaluation:

A. Notebooks can be graded at any time. If you do not have it, it's a zero.

B. Keeping up with note taking, periodic table and flip chart.

C. Tests will be given at the end of each chapter. Notebook quizzes or pop quizzes will be given randomly. Vocab quizzes will be given every unit.

D. Labs: we will conduct labs in this class/Laboratory. The lab safety contract must be signed and returned prior to being in the laboratory. Our first lab will be day 6 of class. .

If you fail to complete the form, you will receive 0 for each lab that is missed. Labs are a large portion of your grade, therefore if you fail to complete this form, you are in danger of failing the course. Also, you may not have more than 4 people in your lab group or less than 2 people. If you do the group will automatically lose 25 points from the grade.

TESTS: Do not help yourself to scrap paper. ASK for some if you need it.

Just know I will only look at work that is written on the test. so I would not use a piece of scrap paper.

If you do not miss any assigned test your final will be over the chapter we are on at that time. If you do miss test that have to be made up then your final is comprehensive over the semester. This is a reward for student that attend school regularly.

Field Trips:

I will not sign the field trip form more than 1 day before you are to go on the trip. I also will not sign if you are not passing my class. I do not want you to get your feelings hurt so I would not even ask for me to sign the permission slip if you know you are not passing the class. Also, I will not sign the form if I have a test scheduled on that day so plan accordingly and look at your syllabus.

All Chapters will have a group assignment to complete for a grade. You will be assigned your group to complete this assignment. You will also have to tell me what each person in your group did. This will be due the day before the test and you will have a speaker that explains the powerpoint* to the class.

* Chemistry Schedule for all TESTS, Labs and Papers. All Chapters and Lab procedures must be read prior to class. All Lab Papers are DUE as you enter the classroom the day AFTER LAB. All Homework papers are due as you walk into class the Day of the test for that Chapter. NO LATE LAB, HOMEWORK, PAPERS, presentations AND ASSIGNMENTS WILL BE ACCEPTED!!! All presentations will be due the day before the test,

Lab Safety Test Day 3

Ch. 1 & Ch 2 Day 5

Pg. 27 #5,13-16,18,24-25,28 & Standards Based Assessment (SBA) PG 64 # 1-23 & SBA

Ch 3 Day 11

P 92 #3-23,28 & SBA

Ch 4 Day 16

P125 #15-25, 30, 38,& SBA

Ch 5 Day 21

PAPER # 1 DUE Day 24

P 165 #4-21, 27,28,42, 48, & SBA

Ch 6 Day 27

P 206 # 1, 2, 6,9,10,15-21,23,25,28,29,34,35,45-48,51,52 & SBA

Ch7 Day 31

pg 246 #1-25,41,42,44 & SBA

Ch 8 Day 37

P283 # 13-15,17,22-30,37,41,43 & SBA
Ch 9 Day 43
Pg 311 # 5,11,14-16,25,32 & SBA
Ch 11 Day 47
P379 # 8,18-23,41,43,68 & SBA
Ch 12 Day 52
P 414 # 18,19, 21,23,27,29 & SBA
PAPER # 2 Due Day 50
Ch 14 & 15 Day Day 57
P474 # 8-11,23,26,& SBA
Pg 504 #10-14 & SBA
Ch 16 Day 60
P531 #8,9 & SBA
Ch 19 & 20 Day Day 65
P 620 # 2,4,5,8,16 & SBA
P 645 #25 & SBA
Paper #3 Due Day 75
Ch 21 Day 70
P 672 #9,10,26-29,40,52 & SBA
Ch 22 Day 74
P 708 # 6a,7,15,17,21,24,26,32,36-41 & SBA
SEMESTER TEST
2
nd
& 4th
Block day 89 1st
& 3rd
Block day 90

LABS (LAB FEE \$10 DUE IN 2 WEEKS)

DAY 2 Sweet Bubble Lab BRING in GUM

Day 6 Use of Lab Equipment

Day 11 Mass, Volume & Density

Day 24 & 25 Comp of Penny (1/2)

Day 35 Allotropic Forms of Sulfur

Day 42 Empirical Formula

Day 47 Double Replacement

Day 55 Mass & Mole Relationship

Day 60 Quantitative Analysis

Day 46 CBL Pressure Lab

Day 59 Specific Heat

Day 56 Acid/Base Titration

Day 80 Organic Lab

Honors science projects due the Monday after Spring Break