AP CHEMISTRY

Mr. Higinio Gonzalez Room 201 Planning period: **2:15 to 3:15 pm or by appointment**

AP Chemistry Syllabus:

The class meets every day, year round for a period of 47 minutes. At least one period a week is dedicated to laboratory experiments (C7) though the student will be required to take their lab results home to calculate, analyze and interpret their scientific data.

Course Description

AP Chemistry is designed to provide a student with college level introduction to chemistry. Students will be required to take the AP chemistry exam in the spring. Many colleges will give college chemistry credit for an appropriate score on the AP test, although that decision is completely at the discretion of the college.

Conference Hours

I am available during my conference period, lunch period and afternoon by appointment. If a parent needs to contact me, please call or preferably e-mail me for a meeting.

Materials

Blue or black waterproof pen, pencil, 2'' binder, scientific calculator (TI 89), and a carbon capable lab notebook.

Text

Chemistry by Zumdahl (5th edition)

Study Habits

The material in this course must be studied and learned daily as it is presented because the units build up on one another. The AP booklet states that students should spent at least 5 hours a week studying outside the class. The actual amount of time spent will depend upon each student's background. If a student does not understand a concept, he or she should see me as soon as possible. Practice problems will be provided daily. While the solutions to homework will be handed out, it is vital that you work through the problems and use this only as a resource. IF YOU DO NOT WORK THROUGH THE HOMEWORK, THE QUIZZES AND EXAMS WILL BE IMPOSSIBLE.

For every chapter you will receive a timeline including topics covered, reading assignments, homework assignments, quizzes, tests, and labs including due dates.

Grading Policy

Tests - 60% - will be announced at least 2 days in advance.

Laboratory reports - 20% - specific guidelines will be handed out separately

Homework and Quizzes - 20% - daily

ON ALL TESTS, LABS, QUIZZES, OR HOMEWORK, ALL OF THE WORK LEADING UP

TO THE FINAL ANSWER MUST BE SHOWN IN ORDER TO RECEIVE FULL CREDIT.

Make Up Policy

Arrangements for make-up work must be made the first day you return from an excused absence. All work will be posted along with a deadline. After the deadline has passed, no credit will be given for the assignments.

Request for work when a student is out due to an extracurricular activity must be submitted in writing at least 2 days before the absence.

You should already be able to:

1.) Write and Balance a Chemical formula
2.) Write and Balance a Chemical Equation
3.) Correctly name a chemical substance
    a. given a formula give the name
    b. given a name give the formula
4.) Correctly apply mathematics to solve problems
5.) Correctly use the Periodic Table of Elements
6.) Use technology (laptops and scientific equipment) to collect, analyze and interpret data.

For additional help (tutorial) please feel free to access the internet.
Internet resources: (others will be added as they become available)
APChemistry: http://www.chemtopics.com/
http://chem.vt.edu/RVGS/APChem.home.html
http://chem.vt.edu/RVGS/GSC/GSC-home.html
http://chem.chem.vt.edu./RVGS/index
http://www.fairbornchempage.com/html.chemlinks.htm.

What you should do in this class.

1. Be in class every school day and be on time (miss a day and you are already behind).
2. Be ready to do work every school day. (Class time is not play time)
3. Read for understanding. (reading is fundamental….you've got to read to understand and ask proper questions)
4. Do not be disruptive (you are only hurting yourself and keeping others from learning) Respect school authority/follow rules
5. Follow the classroom and school rules (life will be so much better if you do)
6. Be neat and organized. Take good notes and do your work.
7. Respect the school property and your peers.
8. We have a dress-code, be prepare to abide by it.
9. God before Country….Always.

Any infraction in the lab which in the opinion of the teacher is dangerous to anyone in the laboratory will be considered a serious offense and will result in an immediate referral and dismissal from the laboratory.

Consequences

1. Failure to abide by any of the rules will result in a lower class grade (or failure)
2. You will be ask to stay after school for detention or report to my class at the end of the day to make up work.
3. Parent Teacher conference (face to face)
4. Parent Teacher Administration conference (face to face)

5. Removal from class.

The Laboratory Notebook (C5) (C7)

A laboratory notebook should be used to explain lab procedures, record all lab data, show how calculations are made, discuss the results of an experiment, and explain the theories involved.

A record of lab work is an important document, which will show the quality of the lab work that you have done. At some point and time, it may be necessary to show your lab book to a university for credit in a chemistry lab course, so keep you book neat and organized since it may be looked at in the future and might be of some great use.

Getting Started:

1. Use a quadrille-lined carbon copy capable book with pages numbered.
2. Write you name and class on the front cover and inside the front cover.
3. Always, Always, Always use black or blue ink!
4. Fill in the table of contents provided in the book. This should be kept current as you proceed during the year. In the table of contents, place the title and the page number where the lab report begins for each lab.
5. If you make a mistake DO NOT ERASE! Just draw ONE LINE through the error and continue. Do not scribble out the error or use white-out. It is expected that some errors will occur. You cannot produce and error free notebook. If you mess up an entire page DO NOT rip it out of the book. Simply draw a line through the page comer to comer and go to the next page.
6. You will keep the original copy of the lab in the book and turn in the carbon copy. If your instructor cannot read carbon copies of the lab easily, the student will receive an automatic 50 for a grade until it is turned in legibly. Late points will be deducted.

Laboratory Reports:

A specific format will be given to you for each lab. You must follow that format and label all sections very clearly. The carbon copy of your lab will be due the day after it is completed in the laboratory, unless the next day is an exam and then the due date will be postponed to the day after that. Make sure your carbon copy is legible. A lab quiz will be given over the lab the day it is due, and you are allowed to use your lab notebook and lab handouts ONLY on this quiz. Be sure to bring the lab books to class on the day of the quiz, otherwise you will have to take the quiz without. Fifteen points will be taken off for the first day a lab report is late and 5 will be taken off for every additional day. The following are the different sections that the various labs may consist of. (Remember, a more specific format will be given to you for each lab.)

Pre-Lab Work:

(To be completed by the day the lab is done. If not completed by start of class on lab day, 10 points will be taken oft)

1. Title
   The title should be descriptive. "Experiment 5", for instance, it not a descriptive title.
2. Date
   This is the date you performed the experiment.
3. Purpose
   A statement summarizing the "point" of the lab. What are you trying to do?
4. Pre-Lab Questions
   You will be given some questions to answer before the lab is done. You do not need to re-write the question, but you do need to write out your answer in complete sentence. This will be of great help to you on lab quizzes.
5. Data Tables
   You will need to create any data tables or charts necessary for data collection in the lab.

During the Lab:

6. Data
   Record all your data directly in your notebook. Label all data clearly and always include proper units of measurement. Underline, use capital letters, or use any device you choose to help organize this section well. Space things out neatly and clearly.

Post-Lab Work:

7. Calculations and Graphs
   You should show how calculations are carried out. Your instructor needs to be able to follow you calculations and read your graphs easily. Graphs need to be titled, axis need to be labeled, and units need to be shown on axis. To receive credit for any graphs they must be at least ½ page in size.
8. Conclusions
   In this section you need to make a statement telling what can be concluded from the experiment. You need to discuss what theory was demonstrated in this experiment, what your calculations show, what the purpose of the experiment fulfilled, why does the experiment work or not work, and list any sources of error you had. This needs to be a very meaningful section. In the instructor's opinion, it is the conclusion that really tells how much a student learned from the lab and it will be closely graded.
9. Post-Lab Questions
   Follow the same procedure as for Pre-Lab Questions

TIMELINE

Unit 1: Chemical Foundations (1 week)
2 Labs
Unit 2: Atoms, Molecules and Ions (1 week)
Unit 3: Stoichiometry (2 weeks)
2 Labs
Unit 4: Types of Chemical Reactions and Solution Stoichiometry (3 weeks)
2 Labs

Unit 5: Gases (2 weeks)
2 Labs
Unit 6: Thermochemistry (1.5 weeks)
1 Lab
Unit 7: Atomic Structure and Periodicity (2 weeks)
1 Lab
Unit 8: Chemical Bondings (2 weeks)
Unit 9: Liquids and Solids (1.5 weeks)
1 Lab
Unit 10: Properties of Solutions (2 weeks)
2 Labs
Unit 11: Kinetics (2 weeks)
1 Lab
Unit 12: General Equilibrium (1.5 weeks)
1 Lab
Unit 13: Acid-Base Equilibrium (3.5 weeks)
3 Labs
Unit 14: Solubility and Complex Ion Equilibria (1.5 weeks)
2 Labs
Unit 15: Thermodynamics (1.5 weeks)
Unit 16: Electrochemistry (2 weeks)
1 Lab
Unit 17: Nuclear Chemistry (1 week)
Unit 18: Organic Chemisrty (1 week)
1 Lab
Unit 19: Review for AP Exam (2 weeks)
Unit 20: Laboratory Final: Green Crystal Lab (2 weeks)

Experiment 1: Synthesis of the Crystal
Experiment 2: Standardization of $KMnO_4$ by Redox Titration
Experiment 3: Determination of % Oxalate in Crystal by Redox Titration
Experiment 4: Standardization of NaOH by Acid-Base Titration
Experiment 5: Determination of K^+ and Fe^{3+} by Ion Exchange Chromotography and Titration
Experiment 6: Determine the % of Water in the Hydrated Crystal

ALL LABORATORY EXPERIMENTS ARE HANDS ON AND WET EXPERIMENTS
A LABORATORY REPORT IS REQUIRED BY EACH INDIVIDUAL STUDENT FOR EACH EXPERIMENT.

(cut along dotted line and returned the signature page below)

ALL STUDENTS TAKING AP CHEMISTRY ARE REQUIRED TO TAKE THE AP CHEMISTRY EXAM ON MAY 13th, 2008.

Please sign and date below to indicate you have read this course outline.

Student signature: _____date _____

Parent signature: _____date _____
_____ date _____

Thanking you in Advance & God Bless You
Higinio Gonzalez
Chemistry and AP Chemistry Instructor
St. Augustine High School
Room 201