Shiloh High School

Advanced Placement Chemistry
First Semester
Fall 2012

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http://gcps-cameronspahn.onmycalendar.com/

Course Description: For a complete course description, please visit the College Board website at http://apcentral.collegeboard.com, click on "Course Descriptions," and then choose AP Chemistry. A PDF file will appear with the description of the course on page 3.

Course Requirements and Expectations:

- Attendance to each class is crucial; missing class will put the student at a disadvantage in that lecture is the best way to learn this material. It is wise to check the course website for missed days and to see the teacher **after** school.
- All work is to be handed in on time. Late work, *if permitted*, will be accepted only the day after the due date at *the beginning* of class. A deduction of 10% will be taken.
- **A minimum of 30 minutes each night** is to be spent on reviewing the day's material, reading for tomorrow's content, and/or working on the assigned problem set. Ideally, one hour each night should be spent on this course material (5 hours/week).

Materials:

1. Textbook *Chemistry: The Central Science* – Brown & LeMay, 11th Edition. Replacement cost: about $125.00
2. To be purchased by student: notebook (a three-ring binder with dividers is preferable), lined or graph paper bound laboratory notebook with carbon paper, and a calculator
3. **Bring Daily:** All materials, your textbook, a pen, and a pencil (with an eraser)

Grading Procedures and Scale:

Class Assessments	**35%**
Summative Assessments	**45%**
Final Exam	**20%**

90-100	A
80-89	B
74-79	C
70-73	D
Below 70	F

Topics to be Covered: (some topics will be review, rather than new material)

Chapter 1	Matter and Measurement	pp 1-35
Chapter 2	Atom, Molecules, and Ions	pp 36-77
Chapter 3	Stoichiometry: Calcs. With Chemical Formulas and Equations	pp 78-117
Chapter 4	Aqueous Reactions and Solution Stoichiometry	pp118-163
Chapter 5	Thermochemistry	pp 164-209
Chapter 6	Electronic Structure of Atoms	pp 210-253
Chapter 7	Periodic Properties of the Elements	pp 254-295
Chapter 8	Basic Concepts of Chemical Bonding	pp 296-339
Chapter 9	Molecular Geometry and Bonding Theories	pp 340-391
Chapter 10	Gases	pp 392-435
Chapter 11	Intermolecular Forces, Liquids, and Solids	pp 436-479
Chapter 13	Properties of Solutions	pp 526-571

Labs - Due to time constraints of regular schedule, **all labs will be done after school**, starting at 2:30pm (no exceptions). Most labs will allow a choice of two days. You will be given at least two days notice for labs. ALL EXTRACURRICULAR ACTIVITIES TAKE A BACKSEAT TO LAB DAYS!

- ⇒ Two opportunities will be offered to complete each lab
- ⇒ You only have to come to one of the two sessions.
- ⇒ You may leave the lab as soon as you are complete.

WebAssign:

All chemistry courses have a problem-solving component. In honors-level (and above) courses, problem-solving plays a crucial role in both illustrating the mathematical nature of our discipline and in refining students' ability to adopt analytical approaches to arrive at answers.

It has been common to assign homework problem sets from the end of the chapter in the textbook. Students would solve their problems and would have to wait until they got it back to see if they were correct.

This year, we will use a service called WebAssign. WebAssign is connected to the textbooks that we already use in class. The problems that are assigned are the same problems from the textbook, but with some upgrades. The database is scripted with mathematical routines which introduce randomly-generated numerical information into the problems. Thus, every student has a slightly different problem and a slightly different answer.

Students log on by entering name-ID-password information and the database creates their problem set. Students print out (if they wish) the problem set and begin work on the problems. As they arrive at answers, they can log back on, enter their answers and submit them to the database. Student answers are evaluated and **immediate feedback** is provided on their correctness. Students subsequently repeat the cycle, making corrections in their solutions and re-submitting answers to the database. With WebAssign they will have **multiple attempts** to get the right answer, whereas in the old way they were either right or wrong.

I can monitor the records in the database to determine which problems are offering difficulty and to provide classroom instruction concerning those problems. Students take ownership of their own problems, organize their time and develop effective strategies for the completion of the sets. Because every student has a different problem with a different answer, student interaction centers on the strategy of how to solve the problem rather than a mere copying of the answer.

WebAssign costs $10.50 for the entire year.

WebAssign is not required, and students who do not sign up will also be able to complete the assignments with pencil and paper.

The website URL is: www.webassign.net.

Students should set their username as first initial, middle initial, and last name. Example: John Q Smith would be: jqsmith.

Students without computer access may use the computers in Shiloh's Media Center before and after school, or may use my classroom computer before or after school.

Chapter Problem Sets

**Due dates for chapter problem sets will be announced.
**__Assignments are subject to change__; changes will be announced.
It is very unwise to begin these problem sets even a few nights before they are due. You should **attempt problem sets as you are learning the material.
If you do not understand how to do a problem, or are uncomfortable with the subject matter, do the problems adjacent to the difficult problem until you feel more comfortable. Many times the adjacent problem will have the answer supplied in the back of the book. More time should be devoted to studying topics and problems which you are unsure of, rather than dwelling on a topic you know. **You can become more comfortable with a topic or concept only through repeated exposure.

Laboratory Notebook:

Each student is required to have a **bound laboratory notebook with carbon paper**. Prelaboratory assignments will be done in the notebook. Refer to the laboratory notebook guidelines handout. Students are to keep this laboratory notebook after the course is over and present it to the chemistry department at their university for laboratory placement, regardless of AP exam score.

Friday Quizzes

Short quizzes can be given approximately once per week. The time limit and length of quiz (10 multiple choice questions or one free response question) are designed to acclimate the student to pacing necessary for the AP exam. The quiz also allows the instructor to gauge student understanding more often than the end-of-unit exam.

The AP Exam:

Students **WILL** take the national AP Chemistry examination given in May. The date, place, and time will be announced. The exam is comprised of two sections – multiple choice and free response. The multiple choice section is 75 questions to be done in 90 minutes *without a calculator*. The free response section is itself in two sections; one section allows a calculator and the other does not allow a calculator. Students have 95 minutes to complete the free response section, which is broken into two parts. Part A is three questions in which the student is given 55 minutes to complete and is allowed the use of a calculator. Part B is two essay questions in which the student is give 40 minutes to complete and is not allowed the use of a calculator. The multiple choice and free response sections contribute equally to the student's overall score. Students are scored on a 1-5 scale. Scores of 4 and 5 allow for the student to be exempted from the first year college chemistry course. Scores of 3 will sometimes allow for exemption, however, most colleges will not accept this score. Scores of 1 and 2 will not allow for exemption. This class provides a comprehensive review before the exam, including a practice AP exam.

Goals of the course:

- Each student in the laboratory will become familiar with new materials and comfortable with old materials using the following laboratory and safety equipment and methods:
    - Analytical balance
    - Paper chromatography
    - Fume hood
    - Gravity filtration
    - Drying oven
    - Vacuum filtration
    - Ice bath
    - Bunsen burner
    - Volumetric flask
    - Temperature probes
    - pH meter
    - Titration
    - Calorimetry
    - Multimeter
    - Dilution
    - Safe handling of acids and bases
    - Solution making

- Students will develop strong problem solving and study skills. In solving problems in AP chemistry, often times the answer or course of action will not immediately be apparent. Logical and analytical thinking is required to approach the kinds of problems one might see on the AP exam. However, logical thinking alone will not carry a student through this course. Students should already have or must develop strong study skills and self motivation to concentrate on the material for a minimum of 30 minutes each night and significantly longer on the weekends and school holidays

CLASSROOM EXPECTATIONS:

- **Be courteous and respectful toward others and the teacher.**
- Have your materials with you and be ready to work when the bell rings.
- Adhere to all school rules. These include dress code, use of computers and school property, possession of electronic devices (CELL PHONES and MP3 PLAYERS), etc.
- **No food allowed in class.** Beverages in a resealable container may be consumed at your desk.
- Remain seated unless you have permission to be out of your seat.
- Any activities not conducive to class learning are unacceptable. This includes disrupting class, being uncooperative and argumentative, using a cell phone in any way, using inappropriate language, sleeping, personal grooming, note writing/reading, etc. These behaviors will result in consequences
- Cheating in **any form** is unacceptable and will result in a zero on the assignment, parent notification, and an administrative referral. I will report you to your teachers for copying assignments for other classes while in my class.
- You will do a great deal of work in groups and each student is expected to do his or her share of the work, in addition to following the guidelines for that specific assignment. **Lab reports are individual assignments, unless otherwise stated. This means you write your own report without the help of your lab partner.**
- Copying and pasting from the internet on lab reports, and using a previous students' work is CHEATING.

CONSEQUENCES:

Class disruptions or violation of class rules may result in detention, call to parent, removal from the classroom, referral to an administrator and/or other consequences deemed appropriate by the teacher.

MAKE-UP WORK:

Make up work is your responsibility! This course will become increasingly difficult with each day missed. Keep absences to a minimum – no absences would be best ☺.

EXTRA HELP:

Extra help is available after school on Monday and Thursday, and everyday in the morning, except Tuesday. See me when you need to schedule extra help. Chemistry concepts build upon themselves – **please seek help as soon as you begin to have problems!**

Extracurricular activities are NOT an excuse for not seeking help. You are a **student** first, athlete/musician/dancer/color guard/club member second.

Please use my **help email address** (**mr.spahn.chemistry.shiloh@gmail.com**) for questions when you are at home. I will check as often as I can.

The **course website** will contain a summary of what we've done each day, including content. I will also post short and long term assignments, like reading assignments and problem sets.

An **excellent website resource** is www.sciencegeek.net. To access the material, place your cursor over the AP Chemistry bar at the top of the page, and then click on "AP Chemistry Homepage." Use the down arrow to select your desired topic. In the same place you accessed the AP Chemistry Homepage, you can also access review activities ("Review Activities"). This excellent webpage contains multiple choice problems and questions to help you prepare for chapter tests and the AP Exam.

Check the course website (http://gcps-cameronspahn.onmycalendar.com/) for schedules, what you missed, and assignments.

SHILOH HIGH LAB SAFETY RULES

AS A SCIENCE STUDENT, I WILL ADHERE TO THE FOLLOWING SAFETY RULES:

1. Follow all general and specific instructions given by the teacher.
2. Study and write out the procedure in your notebook before performing the lab. If you are in doubt about any part of the procedure, ask your teacher for help.
3. Do not perform activities that are unauthorized.
4. Safety glasses and safety aprons should be worn for any activity indicated by the teacher.
5. Do not engage in horseplay or any other inappropriate actions.
6. Know how to use the safety equipment provided for you. Know the location of the fire extinguisher, safety shower, fire blanket, first aid kit and closest administrator's office.
7. Immediately report to the teacher any accidents, injuries or damaged equipment.
8. Any accident that might cause personal injury must be reported to the teacher. An incident report must be filed with county security for any major accident. A copy of the report will be sent home.
9. Place broken glass and waste chemicals in designated containers. Keep insoluble waste materials out of the sinks.
10. Never taste or mouth-pipette any chemical substance. Never inhale chemicals. Keep combustible materials away from open flames.
11. Never remove equipment, chemicals or supplies from the classroom.
12. Never enter the stock room.
13. Leave your area cleaner than you found it.
14. When the laboratory is complete, return all equipment to designated areas. Disconnect any power cords and be sure the water and gas supplies are turned off.

I UNDERSTAND THAT FAILURE TO ADHERE TO THESE SAFETY RULES AND THE REGULATIONS OUTLINED IN THE STUDENT HANDBOOK OR ENDANGERING MYSELF OR ANY OTHER MEMBER OF THE CLASS WILL RESULT IN DISCIPLINARY ACTION AND REMOVAL FROM THE LAB AREA.

Student Name _____

Class _AP Chemistry_____ Teacher __Mrs. Nicole Rader_____

Student Signature _____ Date _____

Parent Signature _____ Date _____

STUDENT INFORMATION:

Name: _____
Phone Number:_____ Email address:_____

PARENT OR GUARDIAN INFORMATION: please write legibly

Mother's Name:_____
Daytime Phone:_____ Evening Phone:_____

Email Address:_____

Father's Name:_____
Daytime Phone:_____ Evening Phone:_____

Email Address:_____

Guardian's Name:_____
Daytime Phone:_____ Evening Phone:_____

Email Address:_____

◇ **Check here if you'd like contact by email including grade reports and updates. Please indicate to which email address these updates should go.**

NOTE FROM THE PARENT OR GUARDIAN:

I have read and understand the expectations for lab safety and this course.

Student Signature:

_____

Parent or Guardian Signature:

_____