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# *AP Chemistry Course Syllabus 2024-25*

***Instructor: Mrs. MEENA MALLIGAARJUNAN***

***Email :*** [***mallime@boe.richmond.k12.ga.us***](mailto:mallime@boe.richmond.k12.ga.us)

***Room: 615***

# *Course Description:*

*Welcome to AP Chemistry! Over the course of this year, you will have the opportunity to learn a great deal about chemistry, much more than you learned or would have learned in the first-year class. We will explore in much greater depth the concepts you have learned as well as new material that will build upon your previous knowledge. Ultimately, this class will serve several functions. It will give you a chance to experience what a college class may be like, it will challenge you with new information, it will prepare you to take the AP exam next May, you will use your knowledge in performing labs, thus “seeing and doing” those concepts you learn in class, and you will develop a greater understanding of how chemistry affects the total environment in which we live.*

*This course is not a revamped, upgraded version of Chemistry I, but rather an in-depth study of more advanced chemical concepts. The course is challenging to both academic content and laboratory procedure. You will be challenged academically, yet the workload is not unbearable. You should review your work every night, and under no circumstances should you allow yourself to fall behind. If you need help, it is always available. I also suggest that you form peer groups for study sessions with homework and study. You will need to set aside time to study the material, come to class prepared, and ask many questions!*

***Textbooks and Lab Books***

*The College Board. AP Chemistry Guided Inquiry Experiments: Applying the Science Practices. 2013.*

*Zumdahl, Steven and Susan Zumdahl. Chemistry, Eighth Edition. Belmont CA: Cengage Learning, 2012. [CR1]*

*Demmin, Peter. AP Chemistry, Fifth Edition. New York: D&S Marketing Systems Inc., 2005.*

*Vonder brink, Sally. Laboratory Experiments for AP Chemistry. Batavia: Flinn Scientific, 2001.*

*Randall, Jack. Advanced Chemistry with Vernier. Oregon: Vernier Software and Technology, 2004. Holmquist, Dan and Donald Volz. Chemistry with Calculators. Oregon: Vernier Software and Technology, 2003.*

*Beran, Jo Allan. Laboratory Principles of General Chemistry, Seventh Edition. New York: John Wiley and Sons, 2004.*

# *The Big Ideas and Course Outline:*

*This course is structured around the six big ideas articulated in the AP Chemistry curriculum framework provided by the College Board. They are intended to guide instruction and provide you with enduring understanding, a body of skills and knowledge that you will take from this course.*

* *Big Idea 1: The chemical elements are fundamental building materials of matter, and all matter can be understood in terms of arrangements of atoms. These atoms retain their identity in chemical reactions.*
* *Big Idea 2: Chemical and physical properties of materials can be explained by the structure and the arrangement of atoms, ions, or molecules and the forces between them.*
* *Big Idea 3: Changes in matter involve the rearrangement and/or reorganization of atoms and/or the transfer of electrons.*
* *Big Idea 4: Rates of chemical reactions are determined by details of the molecular collisions.*
* *Big Idea 5: The laws of thermodynamics describe the essential role of energy and explain and predict the direction of changes in matter.*
* *Big Idea 6: Any bond or intermolecular attraction that can be formed can be broken. These two processes are in a dynamic competition, sensitive to initial conditions and external perturbations.*

***AP chemistry examination format****:*

*AP chemistry exam is divided into two sections:*

*Section I: (90 minutes, 50% of the total grade)*

*60 multiple choice questions but only 50 are graded. Select the best answer from a choice of four options (A-D). In this section of the exam NO CALCULATOR is allowed but access to the periodic table and the equation sheet is allowed. There is 1 point awarded for a correct answer, 0 points without penalty for a wrong answer and 0 points for any question left unanswered.*

*Section II: (105 minutes, 50% of the total grade).*

*7 free-response questions (3 ‘long’ questions & 4 ‘short’ questions).  Long questions take about 23 min. to answer and short questions take about 9 min. to answer. In this section of the exam a calculator is allowed along with access to the periodic table and the equation sheet.*

***Labs***

* *labs completed require following or developing processes and procedures, taking observations, and data manipulation. Students communicate and collaborate in lab groups;*
* *however, each student writes a laboratory report in a notebook for every lab they perform.*
* *A minimum of 20% of student time will be spent on doing hands-on laboratory activities.*
* *A specific format will be given to the student for each lab. Students must follow that format and label all sections very clearly. AP Chemistry lab reports are much longer and more in depth than the ones completed in the chemistry course. Therefore, it is important that students don’t procrastinate when doing pre-lab and post-lab work. Late labs will not be accepted. Labs not completed in class must be done before/ after school by appointment.*

***Lab Notebook***

*Each student must keep up with the labs performed throughout the year. Lab write ups must be your own work even if the lab was performed and discussed as a group. Any write up on these labs will be checked and graded periodically, generally expected within 2 days of performing the lab. Do not let this fall behind! Colleges may request to see your AP labs or notebook prior to granting college credit**.*

***Lab Safety****: Safety in the science classroom and labs an important part of the scientific process. Students will be asked to follow the lab safety guidelines set in the Flinn Scientific Student Safety Contract (https://www.flinnsci.com/high-school-student-safety-contract---English/dc10494/). Failure to comply with lab safety rules will result in removal from the lab. Further action may be necessary based on the behavior displayed by the student.*

***Daily Assignments****: Daily assignments will include warm-ups, class work, and quizzes. They will also include released AP exam questions.*

## ***Learning activities/Classwork****:*

*Classwork activities are structured to enable students to get most work done during the class time. Classwork is not to be taken home unless given permission. Adhere to the timelines for submission. If you are absent, it is our responsibility to get them on the day of your return.*

# *Homework (ungraded):*

*I will collect formal homework problems from you during the year. These problems can be from the textbook, practice problems, as well as studying and reading assigned from the textbook and notes. The AP test as well as science in general is problem based and solving problems will give you practice, skill, and confidence in solving the type you will find on the AP exam and class exams. There will also be ample time to ask questions about any assignment problems and get help in class.*

***Tests***

*A test will be administered at the end of a unit. You may only use the formula sheet and Periodic Table that are provided to you. Tests have 2 parts: Multiple Choice and Free-Response. You MAY NOT use a calculator during the multiple-choice portion of your test. You MAY use a calculator during the FRQ section. You can use formulas and the PT at any time.*

***Make-Up and Reassessment of Learning Activities****:*

*Students will be given opportunities to make-up and reassess assessments. A reassessment plan must be created by the student. This may involve a relearning process, completion of minor assessments, and revisiting the understanding of learning activities. The plan is then present to and agreed upon by the parent and teacher. A timeline to complete the plan will also be established to maintain student accountability. Failure to fulfill the requirements of the reassessment plan may result in revisions and a new plan established.*

***Grading Policy:***

*A student’s grade is a weighted average of the following:*

1. *Minor grades –60%*
2. *Quizzes 2. Labs 3. Learning activities and free responses.*
3. *Major grades – 40%*
4. *Summative assessments/unit tests and posttests 2. Projects 3. Lab reports/ research paper.*

*The goal of the class is that you know and can do a specified set of objectives. To get you there, you will have the opportunity to re-do ANY test or quiz. The requirement to retake something is to practice the concepts through a variety of means, bring the practice to me, and trade for a second (or third or fourth) chance to demonstrate you know the material.*

*NOTE ON GRADES: Due to the nature of this AP course – you should not be penalized for taking this class. To that end, you will have the opportunity to improve your grade over the course of the year. If you do all the assigned work in a timely manner, it is unlikely you will receive a “poor” grade.*

# *Makeup Work:*

*Students shall be permitted to make up work when absent. It is the student’s responsibility to pick up the missed assignments. The student has two days after each date of absence for the completion of makeup work.*

# *Makeup Tests and Quizzes:*

*If you are absent for a quiz or test (not the day before a test or quiz) you will have to arrange for a makeup quiz or test. Makeup quizzes or tests are done in the afternoons after school. Make the appointment after class.*

# *Late Work:*

# *Except for lab reports, assignments may be turned in late within two weeks. Assignments turned in after this timeline may be considered on teacher’s discretion or condition.*

***Required Materials: CHEMISTRY SUPPLY LIST***

1. *Laptop/ iPad (required)*
2. *Textbook --- must be brought daily to class.*
3. *Composition notebook – 1 (for lab maintained throughout the year)*
4. *Interactive notebook –2 (one for each semester)*
5. *Scientific calculator such as the Texas instruments TI-30Xa calculator --must be brought on daily basis.*
6. *Loose-leaf papers*
7. *Pens, pencils, and erasers.*
8. *Colored pencils, markers, high lighters, glue sticks, invisible tapes, scissors – needed for activities.*
9. *Flash drive.*

# *Teacher wish list – Hand sanitizer and tissues*

# *Behavior Expectations:*

*You are expected to arrive to class on time and bring your materials every day. Each student is expected to act seriously and responsibly during class and activities. Mature behavior will increase the level of learning for all students. Disruptions will be dealt with accordingly. Simply put, I expect my students to respect themselves, each other, me, and the classroom as a learning environment. Specific rules and procedures are listed below:*

* *Come to class and be on time.*
* *Cell phones and other electronic devices must be always secured in class and can be used only at the teacher’s discretion.*
* *Bring all of your materials to class every day.*
* *You are allowed to talk only when the teacher says it is okay.*
* *Do all of the work asked of you and turn it in on time.*
* *If you don’t understand something, ask.*
* *Food, candy, and drinks (except for water) should be left outside the classroom.*
* *The teacher dismisses you from class – not the bell. Every student must be in their seat before dismissal.*

# *Leave all the negative attitudes outside of this classroom. AP Chemistry is hard, but it will be much easier with a positive attitude. Remember this class was your choice.*

* *Do the best you can and enjoy learning!!!!*

# *Tutoring:*

*Tutoring is available on Monday-Wednesday and Friday 3.10 -3.50 p.m.*

*It will also be available by student request or as mandated by the instructor.*

***Electronic Devices****:*

*Laptops and tablets are permitted in class for academic activities only. Devices such as cell phones, headphones, and earbuds, charging cords are not to be used in the classroom/lab for any reason. Unless directed otherwise by the teacher, students should turn these items off and stow them in their backpacks upon entry into the classroom. If students are found using cellphones, they will be secured in cellphone jail for the rest of the class. Also, recording any activities in class without the permission of the teacher and other students is prohibited.*

***Classroom Conduct:***

*Any behavior that interferes with the learning of others will not be tolerated in the classroom. Students are asked to follow the ARC Student Code of Conduct and Discipline Plan. Consequences for inappropriate behavior can include a verbal warning, intervention meeting, removal from the classroom, parent notification, parent/student/instructor conference, and/or discipline referral.*

***Communication:***

*Students are expected to stay current with information regarding this class. Announcements will primarily be presented during scheduled class time. Students can also anticipate announcements being posted on Canvas, sent to their student email, canvas email, or through the Remind app. Parents may also be contacted by phone, text, or email to discuss matters pertaining to their student. Student and parents are welcome to reach out to the teacher using any of the methods mentioned above. It is also recommended that parents/guardians monitor student progress through Infinite Campus. If revisions are made to this syllabus or the course to ensure quality instruction, students and parents will be notified.*

***TEXTBOOK:***

*YOU WILL BE ISSUED A TEXTBOOK FOR THIS CLASS AND ONCE YOU SIGNED THAT YOU HAVE RECEIVED THE TEXTBOOK, YOU WILL BE SOLELY RESPONSIBLE FOR THE TEXTBOOK, IF THE TEXTBOOK IS LOST or IF DAMAGES TO THE TEXTBOOK OCCUR DURING THE YEAR, THE COST OF DAMAGES WILL BE ACCESSED AND WILL NEED TO BE PAID.*

***Academy of Richmond County***

***Syllabus Confirmation – Mrs. Meena***

***Please sign and return this form:***

***I have read, understand, and accept the policies and procedures outlined in the class syllabus. I also acknowledge that it is my responsibility to contact my teacher if I have any questions or concerns. I am not allowed to use cell phones during instruction. I require a laptop to access the resources through canvas.***

***Course Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class Period: \_\_\_\_\_\_\_***

***Academic Year: 20\_\_\_\_\_\_\_\_ 20\_\_\_\_\_\_\_\_***

***Student’s Printed Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

***Student’s Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

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

***Parent/Guardian’s Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_***

***Parent/Guardian’s Phone Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***