AP Chemistry Syllabus 2025-26
McKinley Classical Leadership Academy

Instructor: Dr. Jason Kesselring (Please call me Dr. K or just Doc)
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Materials: 1) OpenStax Chemistry 2e 2) 3 ring binder with paper or notebook 3) Folder 4) Writing utensil (pencil and pens) 5) Calculator (Scientific or graphing) 6) Microsoft Teams access 7) Technology (SLPS supplied but do bring it!)

Upfront: Welcome back! Some of you I have taught before, some of you I have not. I strive to be approachable and to make learning enjoyable. I was a pediatrician for 13.5 years prior to teaching (odd career change, tell me about it!) This is Year #8 for me at McKinley, and I am fully vested in challenging students intellectually.

Philosophy: If you are taking this class, there is a decent chance you are considering a career in something science related. Either that, or you are a motivated student looking to take care of requirements before going off to school to study something else. Regardless, you are clearly motivated, and the class will be structured to reflect that. Whether you are pursuing basic science, applied science, or you are just looking for a challenge, this course will prepare you for "the next step."

Science, like many subjects, requires a blend of independent work as well as collaboration. This is not unique to chemistry! **My expectations are that you will do sufficient preparation to come to class ready to learn and to participate to the best of your capability**. Read that again - please! That way, when group work arises, you are ready to help out as a full member. I want this class to be appropriately rigorous; but I also believe in extending a helping hand! You have the right to expect me to treat you with respect and fairness (and I am huge on using "thank you" and "please" - call me out if I don't!) This is also a two-way street, and I expect the same from each student.

At the end of most of our units this year, I am incorporating some problem-based blocks - or real-life chemistry for groups to solve. The intensity and details will vary from unit-to-unit, but the idea is clear: apply the theory and problem-solving that you have learned over several weeks to figure out actual situations involving chemistry. We will go through these exercises at the end of a unit, just prior to an exam. It is another way for you to demonstrate that you understand what you have learned.

I will work hard and do my best to assist and help each of you to achieve to your fullest capacity. One student succeeding is not predicated on someone else doing poorly. With appropriate instruction and effort, it is my goal to have each and every student in this class succeed.

Course Outline: Please note that I will have to keep close to this schedule. The goal is to finish new material to give us 2 weeks to prepare for the AP Exam at the end of the year.

Also note that you can enroll in this class via UMSL for one semester of college chemistry credit. I would recommend taking BOTH the AP test and taking dual enrollment. Your chances of getting credit for putting in the work are more in your favor that way. The sequence is as follows:

Semester 1	Semester 2
Foundational Unit (Stoichiometry and Types of Reactions)	**Kinetics/Rates of Chemical Reactions**
Atomic Structure and Periodicity	**Equilibrium**
Bonding and Intermolecular Forces	**Electrochemistry**
Gases and Solutions	**Review for the AP Exam**
Thermochemistry and Thermodynamics	

Grading: I reserve the right to tweak the grading formula as needed to keep students a) motivated and b) to be accurate or reflect extenuating circumstances. If I need to make an alteration, I will let you know. As of now, here it is:

Unit Tests, assessments, and "Real Life Chem Problems"- 60%

Lab Work - 15%

Classwork (defined as work started in class or work you are given class time to get a portion complete) - 15%

Homework (any work you are expected to finish at home with minimal to no class time to work on it) - 10%

POLICY ON TURNING IN WORK: Most work will be turned in via Microsoft Teams unless noted otherwise. Some labs and most tests will be done with "old school" pencil and paper. This means uploading a copy of work to Teams. If there are assignments where I request a hard copy, the instructions will still be posted on Microsoft Teams.

To be clear, I DO NOT ACCEPT LATE WORK. At higher levels, deadlines are deadlines. Part of college and career preparedness is getting your work done on time.

Homework and classwork are a lower percentage of your grade. If you choose not to turn in work, your grade will not suffer greatly. However, the lack of practice and preparation will become evident in your assessment scores, and your grade will suffer. Homework and classwork are given for you to practice concepts and improve. If you do not practice, you will not improve. As you progress in your education and career, you will have to DO WORK ON YOUR OWN in order to improve. I assess this process by seeing what you know when you get an exam. You might "get points" on classwork or homework if you complete a task. If you do not do the work well by learning earnestly, your test will not reflect your classwork and homework scores. If you do not do work AT ALL, you know the result!

There will be a 1st semester final, and it is a unit test given during finals period in December. There will NOT be a spring final. Your AP Test is enough.

There will be limited opportunities for extra credit. When those opportunities present themselves, it will be for the entire class.

(Total points earned + extra credit points)/ (Total possible points - exemptions)

Letter grades are as follows: **A (89.5% to 100%)** **B (79.5% to 89.4%)** **C (69.5% to 79.4%)** **D (59.5% to 69.4%)** **F (59.4% and under)**

Tests: This section is particularly important; please read in detail. There will be a test at the end of each unit. Each unit test will be in AP format. That means I will pull together a selection of multiple choice and free-response questions from prior AP exams. This is done to give you/your student as many chances to practice what the real AP test will be like.

Scoring done by AP does not allow for half credit. The portion of the question is either correct or incorrect. However, if you make a calculation mistake, you will not get points for the first part of the question. But if you use the "wrong answer" in another calculation, but use the concept appropriately, you can still get credit in subsequent questions. In other words, your test graders must take this into account, and you are only penalized once for the mistake. I will illustrate this in class for better understanding. All of this is to say, "Don't give up!"

In all likelihood, you may not score as highly on tests as you have in the past. AP tests are hard. I will employ a scaled score for assigning letter grades. At my AP meeting, getting in the 70-75% range on multiple choice & slightly above 50% on the free response will get you a proficient score on the actual AP test. My advice is to study to understand the material; the proficient scores of 3, 4, or 5 will follow. I have enclosed the AP rubric/scale with the syllabus - I will only employ this scale with end of chapter tests.

If you miss a test, we will schedule it as soon as it is reasonably possible. Please communicate with me so we can work within the constraints of your other classes vs. this class.

If you score below an 80% (scaled score) on a test, **I will give the student an opportunity to do test corrections. The student will get TWO opportunities to do test corrections during the first semester, and ONE opportunity to do test corrections during the second semester.** In order to obtain credit for doing test corrections, the student must:

-Correct their response (show work, if necessary, on the Free Response Questions)
-Explain why they changed their answer, and the new answer is correct.

If both parts are not present, you do not get credit. This is an exercise to help them learn. As such, it is open note and resource, but they cannot improve their grade above an 80% (I will average old score and the new score, but it cannot exceed 80%)

"Real Life" Chemistry Problems: These are problems I assign at the end of a unit that I have designed that: a) force the students to work without my assistance b) test critical thinking skills c) demonstrate how the concepts we just learned are at use RIGHT NOW in a practical way. This benefits the students in POINTS because they generally do well on this and have fun, WHEN they accept that they need to take ownership of the problem.

Unit 1 (Review unit) → Determine the concentration of an unknown acid (students develop their OWN method)

Unit 2 → Propose a method to clean up Lead contaminated water

Unit 3 → pH, Lactic Acid, and Hydrogen bonding

Unit 4 → How much pressure did the Space Shuttle Challenger generate at the time of the disaster?

Unit 5 → How cold is a "cold pack?"

Unit 6 → Zero Order vs. First Order Chemotherapy (treating a cancer patient)

Unit 7 → Be a chemical engineer!!! (Let us make ammonia!)

Lab Reports: When labs are assigned, I expect the students to read the lab AHEAD of class (I reserve the right to quiz them ahead of the lab), run calculations on the lab, and show their work. I also will ask them follow up questions regarding the concepts. This year, I will push them to think in terms of Claim-Evidence-Reason: Make a claim regarding the data, back it up with evidence, and explain their reasoning in detail. While we may not have a lab in every single unit (and some units we may have more than one), this portion gets students to think independently and thus worth a fair portion of their grade.

EVEN THOUGH YOU WILL DO MOST LABS IN GROUPS, EACH STUDENT MUST TURN IN THEIR OWN LAB UNLESS I STATE OTHERWISE. This means you must do your own calculations and answer questions on your own. Any copying of answers will be regarded as cheating, and you fail the assignment.

ALL STUDENTS WILL BE EXPECTED TO SIGN A LAB CONTRACT AS PART OF REGISTRATION. Lab safety is important, and students will be expected to always take safety seriously. Students will need to wear gloves and goggles for all labs. Any student that does not follow safety or does not follow instructions CAN AND WILL BE KICKED OUT OF THE LAB. This includes but is not limited to: failure to follow instructions, failure to wear equipment properly, handling equipment inappropriately, “joking” about tasting or eating chemicals, rough play in the lab, or other conditions that would make the lab unsafe.

Classwork: I will grade you on problem sets you do in class (individual and group). I may also give students mini quizzes to make sure they are keeping up with reading and the homework I give for problem solving. If you are not keeping up with the work and not paying attention in class (or you are not doing your homework), you will have a tough time performing well with mini quizzes. These questions will be rigorous, although there may not be many questions. My advice is: do the homework, keep pace, and participate. If you do so, this part will not be nearly as difficult.

UNLESS I STATE OTHERWISE, SHOW ALL YOUR WORK AND DO YOUR OWN WORK. FAILURE TO DO SO IS REGARDED AS CHEATING AND WILL RESULT IN FAILURE OF THE ASSIGNMENT.

Homework: Homework will be assigned as needed to supplement or further learning from the classroom. I am fully aware that you are likely to have multiple requirements upon your time, via other courses and after-school activities. If we are to prepare you for the AP exam at the end of the year, there will be some “outside of class” work that needs to get done. It will not be busy work (that does not help anyone). Any work done outside of class is to further our learning when the class convenes together. While not wanting to overload you, I need to make sure you are fully prepared by the end of the year. You will need the practice to prepare you. TRUST ME ON THIS.

Most homework will be: Doing a Peardeck on NEW CONTENT for the next class to prepare you for next class’ problem solving and/or finishing problems.

Class Structure: I will start each day (non-test day) with a question or activity for the first few minutes of class. This may be a non-graded check for understanding or a short quiz. Most non-lab/non-test days, I will have an introduction to the topic for the class, followed by independent individual or group work. In some ways, I want students to think of this class as a seminar - I want and need them to participate with their fellow students. They need to be actively engaged - that is an expectation. I MAY TELL THE STUDENTS THAT I AM NOT TAKING QUESTIONS FOR 10-20 MINUTES. THIS IS TO PUSH THEM TO THINK AND USE EACH OTHER TO PROBLEM SOLVE. I will then re-convene the group to summarize, wrap-up, and get everyone on the same page before the end of class. I will employ informal exit slips as needed, in order to give you a chance to communicate any issues you might have, and to give me another opportunity to employ a non-graded check for understanding. On lab days, I will do my best to get you working ASAP in order to give you sufficient time to complete an activity (again, this is assuming / hoping we can do labs this year).

<u>The “real life problems / PBL” portions</u> - I will introduce the concept at the beginning of the unit. This way, you will know what we are building toward. The concepts we learn will need to be applied to solve the

problem. These also serve as great confidence builders before exams (as the applied problems pull together many concepts at once).

I want to make clear, as your education advances (especially in your specific course of study) that you will need to take an honest assessment on a regular basis of what you know, and what you do not know. If there is something unclear, find or ask for another source, or solicit an alternate explanation. Know how you learn best, and I will do my best to assist you during the process.

Absences: These will inevitably happen, whether these are at the last minute or scheduled. Communication is key! For brief absences, we will assign any homework, classwork, or lab work that was missed. This should be completed as soon as reasonably possible so your learning can continue with minimal interruptions - IT IS YOUR RESPONSIBILITY TO CATCH UP. If you are out for a prolonged period of time, please talk with me, and we will set a schedule to have you catch up.

Classroom expectations: As stated earlier, I am a firm believer in working hard, but also in treating each other with kindness and respect. Learning goes MUCH BETTER in a relaxed environment where there is mutual respect. As such, the specific rules that we will make together at the beginning of the year will reflect this. You are close to being adults, and I will treat you as such so long as your behavior and effort reflect this. Specific procedures are listed at the end of the document. My big expectations and rule are: Act like an adult and I will treat you like one.

Technology expectations: You need to → check Microsoft Teams DAILY for messages / (even on days we do not have class), check your SLPS email DAILY for messages, and STAY OFF YOUR PERSONAL DEVICE (CELL PHONE) in class - see below.

These are expectations in college and the professional world and are easy to do. You have been given SLPS technology, please use it like a professional.

Use of "Artificial Intelligence" in the classroom: You are at the stage of your education where being original and learning to THINK FOR YOURSELF is more important than using AI. There MIGHT be a case where using an "AI" will be sanctioned and allowed under my guidance in the classroom. However, unless stated otherwise, use of AI to complete an assignment is not allowed. Use of AI (such as - but not limited to - ChatGPT) would result in failure of the assignment. Continued use of AI to complete what needs to be original work would result in a conversation with the principal.

There will be a blend in our careers of using AI to accomplish some tasks! However, we still need to be able to do critical thinking. There is little use in using AI before you are accomplished critical thinkers. When we can use it to make a point about a concept, we will.

Please:
-Come to class prepared - have your materials with you and have your work COMPLETE
-Be respectful and kind to your classmates; I use my "thank you" and "please" with you; extend the same courtesy to me and your classmates.
-Follow school and district policy with regards to NOT using your cell phone in class.
-Stay on topic.
-Adhere to the rules of the student handbook.
-Clean up your workspace / table / lab before you leave the classroom (this is really helpful! Thank you in advance!)
-Use school appropriate language in the classroom, hallways, and school property.
-Be on time.
-Communicate with me if you have specific problems, ahead of time if possible. This is another HUGE skill for after high school. It is much easier to help you if I know about issues. A simple email or side conversation fixes a lot - but it needs to come from you first. I promise you, I am easy to work with, and USUALLY work arounds exist - **if** I know about the issue.

Procedures: I will be utilizing Microsoft Teams for most work, so turning in "paper" will rarely be needed. When it is, it is due at the beginning of class

I will have a "do-now" or "warm-up" activity. This should be started at the beginning of class.

I will have a supply of paper, pens/pencils, or other materials if you lack material for the day. Please quietly help yourself to the material needed. Due to coronavirus, if you take a pen or pencil, it is yours!

When I am giving a lecture or instruction, attention should be on me and the information I am conveying. No conversations or other distractions should be taking place. I will take questions from students in an appropriate manner (please, just raise your hand!)

I will put you in groups for group work - sometimes I will pick groups; sometimes students will pick. I am intentional about this - students need to learn to work with a variety of people. Of course, group work will require conversation and collaboration. However, your group should treat each other with respect, talk at a tone appropriate for learning, and have everyone participate. If you need help from me, please ask!

Should you be doing individual work in class, the room should be quiet unless I say otherwise.

There is no talking during tests. Period.

Please turn in your test to my desk (appropriate tray) or raise your hand to have your test collected.

You may use a calculator on a quiz or free response portion of a test - graphing or scientific.

Food and water are not permitted on lab days. I also highly encourage students to wear closed shoes on lab days and to wear lab safe clothing. This is for your safety. Many of the lab activities will be low risk, but I urge students to prepare on the side of caution.

If you need to use the restroom during class, please raise your hand. Once I acknowledge you, you need to sign out before using the restroom. If this becomes a chronic issue, it will be discussed with the student first & then parents. I need you and expect you in my classroom as much as possible. If I see a pattern of avoiding my room, it will be addressed. The same holds for getting a drink during class.

Generally, I will finish right at the bell. If instruction is occurring, do not leave class until I have finished the class. I promise I will not run over for unnecessary reasons & let your next teacher know. (I have started using a "Dr. K, be quiet alarm" 2 minutes before class ends to avoid this problem!)

I am very much excited about this class, this school year, and this group of students! Let's get to this! Please do not hesitate to contact me if you have any questions. I hope this is a wonderful year for all involved.

Respectfully,
Dr. K