Governor’s School for Science and Technology

Advanced Chemical Analysis 2022-2023

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**Course Information:**

**A. Text:**

Chemistry, 9th edition, Zumdahl & Zumdahl (2014).

**B. Grading Scale:** A: 90-100% B: 80-89% C: 70-79% D: 60-69% F: <60%

**C. Types of Evaluation:**

* Tests: Each test will cover material from lectures, problem sets, text reading and laboratory experiments. Corrected tests will be returned to students to review in class but they will remain on file with the instructor.
* Quizzes: Periodically quizzes will be given to check for understanding of the content covered.
* Laboratory work: The lab is used to reinforce concepts studied in lecture and give some practical experience in laboratory work and data treatment. For each day that a lab report is turned in late, the student will receive a 10% grade reduction. Lab assignments will not be accepted once the reports have been graded and returned to the class.
* Problems Sets: A problem set contains problems for an entire chapter. In order to be successful, the student should work problems nightly. Utilize free time to ask questions about particular problems before their due date. Problem sets are not accepted late.

**D. Grade Determination:**

**Each Quarter:** 60% Tests/Quizzes 40% Labs/Problem Sets

**E. Academic Integrity Guidelines:**

No form of cheating, copying or plagiarizing will be tolerated. Graded homework assignments and lab reports should not be copied. Students will share the lab data within their lab group - lab reporting, research and written assignments are independent. Lab reports are not group work.The level of collaboration will be indicated on each assignment.There will be no determination of who is the “copier” versus the “copy-ee” and all involved individuals will receive the loss in points. Research information that is not referenced properly with the source appropriately cited will not be accepted.

**F. Make-up Work:**

* There is no way to duplicate the learning that went on in the classroom when a student is absent. The student will discover that a significant amount of material is covered each day and will quickly fall behind if class is missed.
* Students are responsible for requesting all make-up work due to an absence.
* If the absence occurs the day something is due, the student will turn in the assignment on-time by email or the student is subjected to the late penalty.
* In the event that a test is missed, the student will take the make-up test on the day of their return to school.
* Missed quizzes will be taken during the next class meeting.
* In most cases, if a lab is missed, the student will use data from the instructor.

**G. Laboratory Procedures:**

The ability to observe, collect, tabulate and graph data, and draw meaningful conclusions is all part of the laboratory experience and is vital to a science class. Every student must get involved in real laboratory situations in order to understand the underlying principles of science. Because of the importance of experimentation, certain rules and guidelines must be followed. Students must complete and return the Safety Contract to be eligible to participate in any laboratory activity.

Laboratory procedures and descriptions will be provided to students in advance of the lab for the express purpose of reading and understanding the full procedure and objective of the lab prior to entering the laboratory setting.

Students may share the lab data collected within their group however lab reporting, research and written assignments are independent. Lab reports are not group work.

**Note about Dual Enrollment with TNCC:**

While the Governor's School for Science and Technology (GSST) will do all in its power to secure dual enrollment (DE) status for its courses, dual enrolled course credits are not guaranteed.  Since the Virginia Community College System (VCCS) and Thomas Nelson Community College (TNCC) set the criteria for DE and must approve each course and instructor, unavoidable circumstances that are not within the control of GSST may change the DE eligibility of any given GSST course.  Alternative pathways for meeting specialty program requirements (E.g. concurrent Associates Degree) should be discussed in advance with the home high school counselor.

**Outline of the Course**

**1st Semester: 2nd Semester:**

Chapter 1: Chemical Foundations Chapter 12: Chemical Kinetics

Chapter 2: Atoms, Molecules, and Ions Chapter 13: Chemical Equilibrium

Chapter 3: Stoichiometry Chapter 14: Acids and Bases

Chapter 4: Types of Chemical Reactions and Solution Stoichiometry Chapter 15: Acid-Base Equilibria

Chapter 5: Gases Chapter 16: Solubility and Complex Ion Equilibria

Chapter 6: Thermochemistry Chapter 17: Spontaneity, Entropy and Free Energy

Chapter 7: Atomic Structure and Periodicity Chapter 18: Electrochemistry

Chapter 8: Bonding: General Concepts Chapter 19: The Nucleus: A Chemist’s View

Chapter 9: Covalent Bonding: Orbitals Chapter 22: Organic and Biological Molecules

Chapter 10: Liquids and Solids

Chapter 11: Properties of Solutions

I have carefully read the syllabus for the Advanced Chemical Analysis course. I understand and agree to follow the guidelines for this college level course.

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Student Signature Date

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Parent/Guardian Signature Date