



Hercules Titans

*Diverse 21st Century scholars and leaders
with integrity & academic excellence*

Course Title: AP Chemistry

Department: Science

Grade Level for which course is intended: 11-12

Length of Course: One Year

Pre-requisites: Chemistry (P), Algebra 1&2 (with a Grade of B or better in all of these classes)

Course ID: 66600

Credit Value: 10

Total Instruction days: 180

COURSE PHILOSOPHY:

Educational success depends on quality instruction, optimistic attitude, good attendance/participation, and productive collaboration.

COURSE DESCRIPTION:

This AP Chemistry course is designed to be the equivalent of the general chemistry course usually taken during the first year of college. For most students, the course enables them to undertake, as a freshman, second year work in the chemistry sequence at the institution or to register in courses in other fields where general chemistry is a pre requisite. This course is structured around the six big ideas articulated in the AP Chemistry curriculum framework provided by the College Board. [CR2] A special emphasis will be placed on the seven science practices, which capture important aspects of the work that scientists engage in, with learning objectives that combine content with inquiry and reasoning skills. AP Chemistry is open to all students that have completed a year of chemistry who wish to take part in a rigorous and academically challenging course.

RESOURCES:

Textbook: Chemistry by Zumdahl, 8th Edition @ 2012

Laboratory Instruction: Experimental Chemistry, 7th Edition by James F. Hall @ 2010

* Other Resources will be utilized to address the lesson.

INSTRUCTIONAL PRACTICES:

Use **inquiry-centered instruction** associated with several science practices, including the use of data to derive concepts, the use of questions to guide students learning, the involvement of students in instructional decisions, and emphasis on the use of evidence in inventing concepts. Use lecture, group work, readings, laboratory work, project based learning, power point presentations, library research and internet research.

ASSESSMENT/GRADING:

Homework, laboratory, Class work, Project, Test, binder and portfolio: Use Formative Assessment Technique where students can generate rather than choose a response (short answer), actively accomplish complex and significant tasks and solve realistic or authentic problems. Teacher will use exhibitions, investigations, demonstrations, written or oral responses, journals and projects to determine students' grade.

Grading Scale: Home work/Classwork: 20%; Laboratory work/lab portfolio/binder/Project: 30% , Quizzes/Tests:50%;

Paul Mansingh, Principal

Assistant Principals: Catherine Floresca & Dingane Newson

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GRADE

Students are graded on a numerical system. This numerical grade is then converted to a letter grade. Grade is based on all activities performed pertaining to the coursework. The following is a breakdown of the percentage achievement with the corresponding letter grade.

A=90-100	B= 80-89	C= 70-79	D= 60-69	F= 59 and below
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AP TEST PREPARATION

There would be a once a week review and each student will be given at least five AP released Exam questions/problems on the current chapter and is expected to complete them prior to the review.

LABORATORY GUIDELINES AND PROCEDURES

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 first year Chemistry course. Therefore, it is important that students don't procrastinate when doing pre-lab and post-lab work. Late lab reports will not be accepted. Labs not completed in class must be done at lunch or before/after school by appointment. In every laboratory experiment, students are grouped into stations and assigned with different tasks (facilitator, recorder, time keeper, garbage/material collector, encourager, and presenter). With this, they are given the opportunity to collaborate productively within the station. There is always presentation of results after performing the laboratory experiments (C5).

THE SCIENCE PRACTICES

SP 1: The student can use representations and models to communicate scientific phenomena and solve scientific problems.

SP 2: The student can use mathematics appropriately.

SP 3: The student can engage in scientific questions to extend thinking or to guide investigations within the context of the AP course.

SP 4: The student can plan and implement data collection strategies in relation to a particular scientific question.

SP 5: The student can perform data analysis and evaluation of evidence.

SP 6: The student can work with scientific explanation and theories.

SP 7: The student is able to connect and relate knowledge across various scales, concepts and representations in and across domains.

THE BIG IDEA CONCEPT CHART

Big Idea 1: The chemical elements are fundamental building blocks 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.

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