



Academia Santa Rosa

Bayamón, Puerto Rico

academiasantarosa@asrpr.org

Chemistry Syllabus 2023-2024

Course Title: Chemistry

Teacher: Miss Lisa M. Dillon

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Platform: Grades Garden, Google Classroom and Edusystem

Credit: 1

Office Hours: By appointment.

I. Course Description:

Course aimed at presenting the general foundations on the study of Chemistry. Designed with the purpose of providing an overview of the topics of study using interactive educational platforms, laboratory activities and appraisals according to the demands of the student of the XXI century. The main focus of the course is aimed at an analytical education developing scientific and critical thinking.

II. Objectives of the Course

A. General Objectives:

Develop critical thinking by understanding the basic fundamentals of Chemistry, through varied learning strategies.

B. Specific objectives:

1. Develop the scientific culture in the student.
2. Develop scientific thinking, analytical and problem-solving skills.
3. STEM integration in the classroom.
4. Contribute to the holistic knowledge of the student.
5. Integrate the use of technology as a tool in the development of learning.
6. Integration of multiple intelligences.

III. Course Content:

A. Course methodology (Unit 0)

- Introduction to Chemistry
- Scientific Method
- International System (IS)

- Unit Conversion
- Scientific Notation

B. Chemistry: The Sciences of Matter and Energy (Unit 1)

- The matter
- Properties and changes
- States of the matter
- The elements, compounds, substances and mixtures

C. Matter made up of atoms (Unit 2)

- Atoms and structure
- Models of the atom
- Theories/ atoms
- Atom particles
 - Electrons
 - Protons
 - Neutrons
- Isotopes

D. Introduction to the Periodic Table (Unit 7)

- Development of Periodic Table
- Organization of Periodic Table
- Periodic Table Elements
- Characteristics of the periodic table elements

E. Chemical Bonds (Unit 9)

- Bonds in binary compounds
- Molecular formula and structural or skeletal formula
- Polyatomic ion
- Lewis structure
- Bohr structure
- Iones and polarity

F. Types of compounds (Unit 5)

- Characteristics of compounds
- Types of compounds

G. Reactions and chemical equations (Unit 4,6 and 12)

- Stechiometria
 - Subscript
 - Coefficients
- Particle count
- Equations
- Moles, Molarity
- Reaction in aqueous solution

H. Acids, bases and pH (Unit 14)

- Acids and bases
- The strength of acids and bases
- pH and its uses
 - pH scale
- Calculations of pH, pOH, [OH]

- Avogadro number

I. Reactions and acids and bases (Unit 15)

- Acid-base reactions
- Applications of acid-base reactions

J. Oxidation-reduction reactions (Unit 16)

- Oxidation reactions -reduction
- Application of oxidation reactions -reduction

K. Organic Chemistry (Unit 10)

- Hydrocarbons
 - o Table of organic compounds
 - o Links
 - o OH
- Substitute hydrocarbons
- Plastics and polymers
- Macromolecules
- Cycling compounds
- Organic chemical reactions

L. Environmental Chemistry (chemistry in the environment) (Unit 12)

- Gases in the atmosphere
- Earth's Crust
- Biogeochemical cycles
- Solid waste management
- Energy production

IV. Evaluations

- a) Exams (minimum 2 exam per quarter)
- b) Assessments (2 per quarter) **Pop quizzes will be given**
- d) Homework
- e) Notebook (100 pts/ Semester)
- f) Scientific Fair (100 pts.)
- h) Daily class (100 pts/semester)
- i) Laboratory (100 pts.)

V. Distribution of grades:

- 100-90 A
- 89-80 B
- 79-70 C
- 69-60 D
- 59-0 F

VI. Course materials

- 1 Large notebook (class)
- 1 Regular Notebook (Laboratory)
- Pencils #2(write), Rubber (eraser) and Blue, black and red pens.
- Pencils (Colors)

- Scissors, Glue, **Millimeter graphics paper**
- "Highlighter" colors
- Folder (save documents)
- Computer ("Laptop"), **PENDRIVE**
- 16Gb** • **Scientific Calculator** (Grades: 9,10,11/12)
- Millimeter rule
- Sharpener
- Protractor, compasses

VII. Reasonable accommodations

Any reasonable accommodation must be worked through the office and will be consistent with the American with Disability Act (ADA); such accommodation shall be enforced in the classroom effectively in the school year.

VIII. Cell Phone Policy

Students are not allowed to use cell phones during class unless the teacher explicitly approves it on a specific day for instructional purposes. When entering the classroom, all students must place their cell phone in their assigned area of the classroom or another assigned location specified in the front of the room by the teacher. Once placed in the cell phone holder area, students cannot access their phones during class hours, unless they leave early from the school facilities.

IX. Necessary in class resources

According to the school's policy, personal computers must be fully charged and taken to each class period. Students will not ask to charge school devices in the classroom and do not have the right to recover tasks lost due to depleted batteries. The lack of load of the devices constitutes an interruption of class procedures and can lead to disciplinary measures.

X. Plagiarism

Plagiarism is to present another person's words or ideas as if they were completely own. Plagiarism is a violation of the Code of Honor. The acts of plagiarism may include, but are not limited to: 1. Use words or ideas from a source published or from the Internet without the appropriate permission; 2. Use someone else's work (e.g., copying another student's assignment, composition or project into theirs in whole or in part; 3. Through the excessive use of editing suggestions from another student, teacher, parent, guardian or paid author.

XI. Teaching strategies:

- a) Exploration, Conceptualization and Application (ECA)
- b) Cooperative (peer-to-peer) learning
- c) Strategies; Constructivist, Cognitive
- d) Problematization-Awareness through Scientific Research (PROCIC).
- e) "United Nations Educational, Scientific and Cultural Organization"(UNESCO) (g) Strategies; brain storming ideas, concept map, among others.

XII. Course requirement :

1. The student must keep a record of their evaluation on the back of their notebook.
2. The student must keep their uniform clean, complete and in accordance with the established rules of the Student Manual of the institution.

3. The student must arrive at the time established by the institution, if not, must have a valid excuse provided by their guardian (Regulation of Academia Santa Rosa de Lima).
4. The student must promote an adequate and respectful vocabulary in their school environment. (classmates, teachers and faculty)
5. The student must provide a valid medical excuse when absent. This excuse should be evaluated primarily by the director, then the teacher. (Regulation of Academia Santa Rosa de Lima).
6. It is the responsibility of the student to cover any material that they have not obtained in the days of absence. (Regulation of Academia Santa Rosa de Lima).
7. The student must subscribe to the Blog and Edmodo of the class effectively. (Regulation of Academia Santa Rosa de Lima).
8. It is the student's responsibility to ensure that they do not lose their credentials from the platforms used.
9. The student must make up any formative/summative assessment no more than **2 days after their absence.**
10. The student must bring all their materials daily.
11. The student must communicate any personal situation that is related to any technical failure that is presented to him with his electronic device (computer / internet) in advance. (Regulation of Academia Santa Rosa de Lima).
11. The student must turn in all work on time, if not fulfilled, the student will be deducted 5 points for each day late. On the third day no work will be accepted and your grade will be 0- F automatically if no valid excuse is turned in on time.

**** This syllabus is SUBJECT TO CHANGE**



Regulations for Parents and Students

General Criteria

- Once given the passwords, it is the responsibility of the student to enter daily to ALL platforms.
- The emails assigned by the institution as well as the passwords to enter the platforms and / or video-audio conferences are for academic purposes so it is not allowed to disclose such information.
- For all types of communication you must make use of your first and last name.
- The student will be responsible for the material, for staying informed, for verifying the assigned tasks daily and for maintaining direct communication with the teacher at all *times*. **The teacher is not responsible for reminding the student of overdue tasks.**
- Respect the school schedule (**schedule 7:30 am – 2:30 pm**). All communication will be during school hours; messages received after this time will be **replied to the next day.**
- All tasks and/or jobs must be received through the platforms designated by the administration.
- Assigned assignments must be delivered on time and within school hours, otherwise the first two days of arrears will lose points. After the two days you will get zero on work.
- The assigned jobs and/or tasks must be original to the student. Plagiarism will be sanctioned by the administration.
- The student must remember and keep their credentials up to date in order to attend the video conferences and be able to enter the platform.
- To avoid confusion, the student must register only once.
- The student must write emails using the rules of courtesy and respect for each teacher.

***The administration and/or institution reserves the right to establish new rules or to make changes to those already established as it deems appropriate.**

Santa Rosa de Lima Academy
Bayamón, Puerto Rico
Science Syllabus Reading Certification



Student Name: _____

Date: _____

Grade and group : _____

I hereby certify that I received and read my child's record for the course of higher level sciences, Biology, Chemistry or Physics (Mark the corresponding course) for this school year 2022-23.

Student's Name

Student's Signature

Guardian's Name

Guardian's Signature

Teacher's initials

***This document must be signed and returned during the first week of classes.**