

Chemistry Syllabus



Purpose

Today much of the so-called “science” is junk science. What is junk science? Junk Science is information NOT obtained through the scientific method. It’s someone’s opinion or belief but it has not verified by empirical data. Therefore, it is not science.

So, the first goal of this chemistry course is to equip you with the necessary tools for making informed decisions on scientific information. The second goal of this chemistry course is to familiarize you with matter, its components, and the changes it undergoes. The third goal of this chemistry class is to open your thinking to a world of discovery by questioning, testing and challenging the world around you.

Objectives

Theory

- 🕒 Recognize what science is and is not.
- 🕒 Outline the scientific method and the experimental process.
- 🕒 Understand the definition of chemistry.
- 🕒 Explain the role of energy in chemistry.
- 🕒 Know the physical characteristics, chemical characteristics and states of matter.
- 🕒 Learn the metric system and SI units.
- 🕒 Determine precision, accuracy and significant figures.
- 🕒 Explore the development of the modern atomic theory
- 🕒 Investigate the mysteries of the quantum theory
- 🕒 Discover the quantum mechanics
- 🕒 Learn how to write electron configurations and orbital notations
- 🕒 Comprehend the role of the **electron** in chemical reactions
- 🕒 Discover **the 7 Secrets** of periodic table
- 🕒 Understand chemical bonding and molecular geometry
- 🕒 Learn how to name and write chemical formulas
- 🕒 Describe acids and bases
- 🕒 Recognize chemical reactions and predict the products
- 🕒 Grasp Avogadro’s number and the mole concept
- 🕒 Perform stoichiometric calculations
- 🕒 Learn and use the gas laws
- 🕒 Study solutions, molarity and molality

Skills

- 📖 Learn to use the calculator as a tool.
- 📖 Sharpen your algebra skills.
- 📖 Master problem-solving with unit analysis.
- 📖 Master naming compounds and determining chemical formulas
- 📖 Learn to write and balance chemical equations.

Laboratory

- 🕒 Learn and use safe lab procedures.
- 🕒 Name and use lab equipment.
- 🕒 Develop skills for observing, accurate measuring and record keeping.
- 🕒 Learn how to use a laboratory notebook.

How to Succeed in Your Chem Class

Correct your mistakes. Don't be afraid to make a mistake, learn from it.

Have a good attitude. Your attitude should be positive and say "I can" not "I can't".

Expect to practice. You must practice your new skills. Practice makes permanent.

Make it to class. Never miss class and you never have to worry about make-ups.

“There’s an old saying, “Repetition is the Mother of Skill,” meaning that in order for you to improve or increase your performance, you need to practice the fundamentals over and over again.”