

CHEMISTRY 1401

Syllabus

Text Book: **Essential Chemistry by Raymond Chang**

Lab Manual: **Freshman Chemistry Lab Manual by Rangra and Houston**

OBJECTIVE: At the end of this session, you should be able to develop a good understanding of the basic concepts of Chemistry, and terms used in any laboratory. Class discussion will involve topics such as Volume, Mass, Density, Temperature., Atomic structure, significance of the Periodic Chart, relationship of a Chemical Formula with Molar Mass, Chemical Bonding, Characteristics of Chemical Reactions, a Chemical Reaction Equation and reasons for Balancing it, concept of Acid-Base-Salt, Aqueous solutions, Laws that govern Gaseous Systems, different Concentration Units that Scientists use in their work, and etc.

The following chapters will be covered:

CHAPTER 1: BASIC CONCEPTS ... Classification of matter; Physical and Chemical properties of matter; Units of Measurements includes SI units of mass, Volume, Length, Density, and Temperature....

CHAPTER 2: Atoms, Molecules and Ions..... Structure of an atom... protons, electrons, neutrons; atomic number, mass number, isotopes; Elements and periodic table; Chemical formulas; Naming of chemicals

CHAPTER 3: Atomic mass, Molar mass, Percent Composition of compounds, Formulas... Empirical and Molecular formulas; Chemical reactions, and chemical equation..... balancing chemical equations, relationship between the amounts of reactants and products

CHAPTER 7: ELECTRON STRUCTURE OF ATOMS... Start with section 7.6 Quantum numbers.. continue on to Orbitals, electron configuration of atoms

CHAPTER 8: ELECTRON STRUCTURE of ions, atomic radius, ionic radius, ionization potential, electron affinity, and periodic chart,

CHAPTER 9 and 10: Chemical Bonding.... Lewis Dot symbols, Ionic and Covalent bond, Polar and non polar molecules, Pauling Electronegativity scale, 9.1, 9.2, 9.3, 9.4, 9.5 and section 10.2,10.3 and 10.4

CHAPTER 4: Chemical Reactions..... Electrolytes, non-electrolyte systems Precipitations reactions, acid-base reactions, oxidations reactions, Concept of oxidation numbers, **Preparation of solutions.....** concentration units such as percentage by weight, and by volume, and Molarity.

CHAPTER 5: Gases..... with emphasis on ideal gas equation will be covered

Grading Policy

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|----|---|------|
| 1. | Three (3) one hour Exams | 40 % |
| 2. | Final Exam.... will cover almost all the topics | 20 % |
| 3. | Lab | 20 % |
| 4. | Home Work.... Includes | 20% |

1. Assignments from the back of the chapters, and out of the lectures
2. Attendance in the class on certain days picked at random depending on my whims
3. Summarizing articles that I will give you periodically

PLEASE DO NOT UNDERESTIMATE THE IMPORTANCE OF ANY ONE OF THESE ITEMS

You are responsible for turning in your assignments on time..... Your absence from the class does not excuse you from your obligations. Assignment turned in within twenty four (24) hours of the deadline will be accepted if cleared with me in advance.....

Hello... My name is **Avinash K. Rangra**, my Office is in **WSB 320**... voice mail is **837-8116**e-mail is **arangra@sulross.edu**, ... My Office hours are posted outside my office.....Drop by ... no appointment is needed..... to gripe about your favorite/not favorite topic..... In case you show up, and I am not in my office, please leave a brief note with your name and phone number.... in case you wish for me to respond.

I need for you to give me a **five digit code name** it will be used to post grades outside my office You must not overlook this important information.... in case you have question(s), see me before the next update for corrections.....

REMEMBER..... **Chemistry is User friendly**.... It is all around you... Enjoy it.

IMPORTANT: It is Sul Ross State University policy to provide reasonable accommodation to students with disabilities. If you would like to request such accommodations because of a physical, mental, or learning disability, please contact the Disabilities Services Coordinator in the University Center, Room 211, or call (432) 837-8037.

'Dare.....Strive for the Impossible'

