



**Syllabus for the Proof of Admission to Studies of Degree
Syllabus of Chemistry (School of Sciences)**

A. Link chemical and structure of the matter

- Development of the periodic table: historical contributions to its elaboration, current importance as a predictive tool of the properties of the elements.
- Electronic structure of atoms after analysis of their interaction with electromagnetic radiation: explanation of the position of an element in the periodic table and the similarity in the properties of the chemical elements of each cluster.
- Theories on the stability of atoms and ions: prediction of the formation of links between the elements, representation of these and deduction of what the properties of the chemical substances are. Testing through observation and experimentation.
- Nomenclature of simple substances, ions and inorganic compounds: composition and applications in everyday life.

B. Chemical Reactions

- Fundamental laws of chemistry: stoichiometric relations in reactions, chemistry and in the composition of compounds. Resolution of quantitative questions related to chemistry in everyday life.
- Classification of chemical reactions: relationships that exist between chemistry and important aspects of today's society such as, for example, the conservation of the environment or the development of drugs.
- Calculation of quantities of substances in concrete physicochemical systems, as gases, ideal solutions and their properties: measurable variables of the state of the same in situations of everyday life.
- Stoichiometry of chemical reactions: applications in industrial processes, further significant to engineering chemistry.

C. Organic Chemistry

- General physical and chemical properties of organic compounds from their structures. Functional groups: generalities in the different homologous series and applications in the real world.
- Rules of the IUPAC to formulate and name correctly some compounds: mono and polyfunctional organic compounds (hydrocarbons, oxygenated compounds and nitrogenous compounds).