Keilir
Miðstöð vísinda,
fræða og atvinnulífs

Chemistry 2A (EFN2A06)

Preliminary University Studies Department

Course description

The evolution and value of the study of chemistry along with the status and nature of the subject will be taught in this course.

The course will include the following:

- Distinctive features of chemicals (melting point, boiling point, density and states of matter). Pure substances and chemical compounds, elements and mixtures.
- The international system of units, valid digits, unit conversions and uncertainty.
- Atom structure, particles, atomic number, mass number, atomic mass, atomic mass unit, isotopes, ions.
- The periodic table and terminology for ionic compounds and binary compounds.
- Chemical equations, balancing chemical equations.
- Chemical reactions: precipitation reactions, combustion, oxidation-reduction reactions, acid-base reactions.
- Formula for mass, mole, molality, mass percent, empirical formula, structural formula, molecular formula.
- The electron structure of atoms: organization of atoms, shells, leeway, valence electrons, octet shell/s, the octet rule, Lewis' dot formulas.
- Chemical bonds: electronic motion, ionic bonds, covalent bonds, polar covalent bonds, metallic bonds, van der Waals bonds (forces) and hydrogen bond.
- Gas laws: ideal gas, relationship between pressure, volume and ideal gas temperature. Calculation of volume, temperature, moles of gas, pressure and the density of gas.

Prerequisites (Required preparation)
Elementary school

Competence level
2

Credits
6

By the end of the course the student has:

- Understood the importance of research in chemistry and the effects of it on the history and development of the subject.
- Realized the usefulness of the subject in relation to Icelandic context as well as providing a foundation for future study, participation in society and various workplaces.
- Gained understanding of the basics of chemistry.
- Understood the effects of chemicals in the environment.

Course assessment:

The course is assessed in a variety of ways, there among group work, individual assignments, quizzes and a final exam that will make up part of the final grade.