

Subject: CHEMISTRY - 30 hours

Prerequisites	-
Course aim and skills acquired	The main purpose of the subject is to introduce students to chemistry, covering both theoretical and computational problems. After the course, the students will be able to analyze and solve basic chemical problems in their further study.
Course contents	Elementary particles. Structure of the atom. Periodic table. Basic laws of chemistry. Chemical bonds. Micro- and macroscopic structure of matter. Principal types of chemical compounds and their properties. Structure and nomenclature of inorganic compounds. Basic types of chemical reactions. Acid-base reactions and redox reactions. Basic concepts and relationships of thermodynamics. Chemical equilibria. Percentage and molar concentration. The concept of chemical equivalent. Mixing solutions. Dilution and solubility. The concept of pH. Definitions acids and bases. Strong and weak acids and bases. Organic compounds. Hydrocarbons, alcohols, aldehydes, ketones, ethers, phenols, carboxylic acids, esters, fats, carbohydrates. Organic compounds containing nitrogen and sulfur. Introduction to chemical analysis.
Literature	Chemical Principles, 5 th ed., P. Atkins, L. Jones, Chemistry: Molecules, Matter and Change, 4 th ed., P. Atkins, L. Jones, Organic Chemistry, 8 th ed., J.E. McMurry,
Students input	Class attendance is obligatory. Timely submission of assigned homework.
Assessment criteria	Continuous assessment of current work - quizzes during classes/homework – 50% Examination after the end of the lecture cycle – 50%. To pass, more than half of the available points are required.