Course Title	General and Inorganic Chemistry				
Course Code	CHE113				
Course Type	Compulsory				
Level	Bachelor (1st Cycle)				
Year / Semester	1st Year / 1st Semester				
Teacher's Name	TBA				
ECTS	9	Lectures / week	2 Hours	Laboratories / week	3 Hours
Course Purpose and Objectives	• This introductory course is taught in the first semester of studies when students of the Biomedical Sciences Program are expected to familiarize themselves with basic concepts and principles of inorganic chemistry such as structure of atoms and molecules, orbitals, chemical bond formation, the electronic effects, the periodic table and periodic properties of elements. • This course aims to provide the students with the required background for further understanding of stereochemistry that leads to the chemistry of complexes, an indispensable tool for the understanding of multiple biological processes, such as enzymatic reactions. • Finally, students will get acquainted with the chemical laboratory, basic chemical techniques, good laboratory practice and safety regulations when performing chemical experiments.				
Learning Outcomes	Upon successful completion of this course the student will be able to: • Recall basic concepts such as: atom, molecule, atomic and molecular orbitals, and chemical bond • Predict basic physicochemical properties of molecules based on their chemical structure • Perform simple chemical calculations and write simple chemical reactions • Recognize, name and classify inorganic compounds • Define molecular geometry • Describe a chemical laboratory as well as basic techniques used for the study of simple molecules • Apply safety rules when performing laboratory exercises in chemistry				
Prerequisites	None	Co-requisites	None		
Course Content	• **Theory**				

	• Structure of the atom, hydrogen atom, atomic orbitals, electron configuration, hybridization, periodic table • Chemical bonds (covalent, non-covalent), structure of molecules, molecular orbitals. • Solutions, electrolytes, acids, bases, salts, pH, buffers. • Structure of molecules, Lewis structures, multiple bonds, elementary solid state. Metal Bond, liquid state, gaseous state. • Thermodynamics: free energy, enthalpy, entropy, equilibrium, stoichiometry, Mole definition, pressure, volume, temperature, concentration, solution, chemical reaction kinetics, activation parameters. • Chemical reactions: classification, types, chemical equilibrium, chemical kinetics, oxidation-reduction reactions. Theory of acids and bases, chemical reactions, energy, basicity, acidity, nucleophilicity, electrophiles. • Spectroscopy. • Stereochemistry, complex chemistry principles, nomenclature of inorganic compounds **Laboratory exercises** • The chemical laboratory, description of basic safety principles. • Familiarization with basic chemical utensils and devices- Basic Laboratory Techniques • Assessment of physical constants • Preparation of solutions, mass and density of solutions • pH measurement and buffer solutions, salt solubility • Chemical reactions. • Molecular weight • Charles's Law • Chromatography • Titration • Spectrometrylab • Laboratory report writing
Teaching Methodology	Face- to- face
Bibliography	Ebbing D, Gammon S.D, General Chemistry (9th Edition), Brooks Cole, 2007. Murrel J.N, Kettle S.F, Tedder J.M. The Chemical bond, John Wiley & Sons Ltd, 2nd ed, 1985.

Assessment	Examination 60% Assignments /Lab 30% Class participation 10% 100%
Language	English