Study Programme : BSc in Ecology

Degree level: Bachelor degree,

Course Title: Chemistry

Professor: Aleksandar Djordjevic

Required Course

Number of ECTS: 8

Prerequisites:

Course Objective: The goal of course are to acquire knowledge of the basic laws in general, inorganic, organic chemistry and cognizance of fundamental princip ecology.

Course Outcome: Once successfully implemented pre-examination and examination commitments student may:
- Acquire and use knowledge in general, inorganic and organic chemistry.
- Acquire knowledge and is used for spotting and recognition of chemical issues in ecology.
-Understanding of using basic chemical principles in order to apply to complex models in nature
- Introduction to the work in the chemical laboratory.

Course Content:

Theoretical part

The structure of atoms and chemical bond, chemical kinetics, disperse systems, the equilibrium in aqueous solutions, pH, hydrolysis of salts, buffers, redox reaction, the equilibrium in heterogen sistem. Basic inorganic principes, circulation elements in the hydrosphere, pedosfer and atmosphere. Basic principles of organic chemistry, hydrocarbons, alcohols and phenols, aldehydes and ketones, organic acids and derivatives, organic compounds with nitrogen and sulfur, primary biomolecules (hydrocarbons, lipids, aminokisleine and proteins, nucleic kisleine). Toxic organic polutant in hidrosfere.

Practical part

Getting to know the basics of safe operation of chemical laboratories, the separation of mixtures, the concept of mall, stehiometry, the basic chemical laws, solutions and systems, chemical kinetics, pH, hydrolysis of salts, buffers, complex salts, inorganic non-metal chemistry (H, O, S , P, N, Cl), inorganic chemistry of metals (Na, K, Mg, Ca, As, Cu, Zn, Co, Ni, Fe, Mn, Hg, Cd, Pb, Sn,), the chemical properties of hydrocarbons, ether, alcohols and phenols, aldehydes and ketones, carboxylic acids, carbohydrates, lipids, amino acids and proteins.

Reading List:

1. Opšta hemija, Nada Perišić Janjić, Nauka, Beograd, 1993
2. Organska hemija, R.Vukićević, A.Dražić, Z.Vujović, Svetloskomerc, Kragujevac, 2005
3.Fizičko hemijski osnovi zaštite životne sredine, knjiga prva, Stanje i procesi u životnoj sredini, Dragan Veselinović, Ivan Gržetić, Šimon Đarmati, Dragan Marković, Fakultet fizičke hemije , Beograd 1995

Total hours:				
Lectures: 3	Practicals: 3	Other:	Student research work:	

Methods of instruction:

Lectures, exercise-experimental and chemical tasks, consultation

Assessment (maximum number of points 100)

Requirements	**points**	**Final exam**	**points**
Active participation in lectures	5	Practical exam	10
Active participation in practicals	10	Oral exam	30
Test(s) or	35		
Pre-exam testing	10		