|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Course: | | General Chemistry | | | | | | | | |
| Course id:3ОУВ1О04 | |
| Number of ECTS: 6 | |
| Teacher: | | Prof. dr Boris Popović, Prof. dr Dubravka Štajner | | | | | | | | |
| Course status | | Mandatory | | | | | | | | |
| Number of active teaching classes (weekly) | | | | | | | | | | |
| Lectures: 3 | | Practical classes: 2 | | | Other teaching types: | | Study research work: | | Other classes: | |
| Precondition courses | | None/navesti ako ima | | | | | | | | |
| 1. Educational goal   Providing the basis for the formation of a certain view of the world, getting to know the most important principles, theories and laws of chemistry, providing theoretical basis for acquiring other skills, mastering specific skills related to the application of theoretical knowledge, the development of creative skills and practical skills necessary for the exercise of the profession. | | | | | | | | | | |
| 1. Educational outcomes   After completing the course of chemistry, students will train the application of theoretical and practical knowledge of chemistry both in life and in the acquisition of other knowledge (eg, biochemistry, agrochemistry, microbiology, physiology, etc.). In terms of practical knowledge and skills students will be able to compute in chemistry, handling basic laboratory equipment, perform basic volumetric determinations and basic instrumental measurements. In addition to this, students should be able to continue their studies or to apply their knowledge and understanding of the profession and to convey it to others. | | | | | | | | | | |
| 1. Course content   Theoretical classes:  Introduction. Basic concepts and laws of chemistry. Chemical formulas and equations. The structure of the atom. The distribution of electrons in the atom. The structure of atoms and the periodic table of elements. The structure of the molecule. Electron theory of chemical bonding. Intermolecular interactions and states. Fundamentals of chemical thermodynamics. Fundamentals of chemical kinetics. Chemical equilibrium. Chemistry of water. The solutions. Electrolytic dissociation and equilibrium in electrolyte solutions. Acids and bases. Hydrolysis and buffers. Solubility and solubility product. Oxidation-reduction processes. Fundamentals of electrochemistry. Corrosion. Colligative properties. Koliodi. The chemical characteristics of natural and waste waters. Water purification. Structure and classification of organic compounds. Hydrocarbons. The chemical composition of the oil. Organic compounds with oxygen and nitrogen. Chemistry fuels and lubricants.  Practical teaching:  The stoichiometry. Quantifying the composition of the solution. Quantitative analysis. Acid-base titration. Permanganometrija. Electrolytic dissociation and pH. Potentiometric titration. Determination of total hardness of water. Spectrophotometry. Hydrocarbons and for all their reaction. The organic compounds with oxygen (alcohols, carbonyl compounds and acid). The acid number of the fuel. | | | | | | | | | | |
| 1. Teaching methods   Theoretical classes and practical exercises. | | | | | | | | | | |
| Knowledge evaluation (maximum 100 points) | | | | | | | | | | |
| Pre-examination obligations | | | Mandatory | Points | | Final exam (izabrati) | | Mandatory | | Points |
| Lecture attendance | | | Yes | 3 | | *Theoretical part of the exam/Oral part of the exam/Written part of the exam-tasks and theory* | | Yes | | 55 |
| Test | | | Yes | 20 | |  | | | | |
| Exercise attendance | | | Yes | 2 | |
| colloquium | | | Yes | 20 | |
| Literature | | | | | | | | | | |
| Ord. | Author | | Title | | | Publisher | | | | Year |
|  | Gorzynski Smith, J. | | General, Organic &Biological Chemistry | | | Published by McGraw-Hill, New York. | | | | 2010. |
|  | Štajner, D., Kevrešan, S. | | Chemistry | | | Faculty of Agriculture, Novi Sad | | | | 2006. |

|  |  |  |
| --- | --- | --- |
| Znak univerziteta | UNIVERSITY OF NOVI SAD  FACULTY OF AGRICULTURE 21000 NOVI SAD, TRG DOSITEJA OBRADOVIĆA 8 | Znak fakulteta2 |
| Study Programme Accreditation  Undergraduate Academic Studies *(*Agrindustrial engineering; Water management*)* |
| Table 5.2 Course specification | | |