VILNIAUS KOLEGIJA | AGROTECHNOLOGIJŲ FAKULTETAS

**Address:** Studentu str. 39A, LT-08106 Vilnius, Lithuania.
**Erasmus+ Coordinator at the Faculty:** Nijolė Ružienė, Email n.ruziene@atf.viko.lt, Room No 219.
It is brought to your kind notice that information which is below could be changed according to unforeseen circumstances.

## SPRING SEMESTER

| COURSE TITLE | ECTS CREDITS | SUMMARY |
|---|---|---|
| **Study programme APPLIED CHEMICAL ANALYSIS** | | |
| Biotechnology | 3 | The aim of the subject is to acquaint students with key areas of biotechnology science, major biotechnology industries and products, recombinant technologies (cloning, PCR reaction), protein synthesis in eukaryotic and prokaryotic cells. During practical classes students watch the transformation of eukaryotic cells, recombinant protein synthesis in *E.coli* cell, analyse the results of synthesis, fractionation of proteins in denaturing conditions, polyacrylamide gel. |
| Chromatographic Analysis | 6 | While studying the subject students get acquainted with the basics of chromatographic analysis, classification of methods, examples of liquid and gas chromatography application, operating principles of the used equipment and peculiarities of the instrumental analysis. |
| Physical Chemistry | 6 | The aim of the course is to acquaint students with differences between ideal and real gases, application of the ideal gas equation for real gas, gas liquefaction, gas mixtures, physical properties of liquids and crystalline state. Students learn the fundamentals of thermodynamics, basic laws and findings of thermochemistry, develop the ability to perform thermochemistry calculations, apply phase rule equation for single-component and two-component systems, make phase diagrams, analyse physical properties of solid materials in solution liquids, liquid solutions in liquids and gas solutions in liquids. The subject provides students with the knowledge of chemical equilibrium, equilibrium shifts, chemical affinity of substances, influence of various factors on the speed of chemical analysis, classification of reactions and the molecular activation theory. Students will also analyse surface phenomena, application of catalytic processes in modern technology, study the electrolysis, electric conductivity of solutions and practical application, galvanic cells, learn to classify disperse systems, make and analyse microheterogeneous systems and apply them practically. |
| Practice in a company | 20 | Normative documents, research methodologies, technical characteristics of laboratory equipment, equipment used in practical work are analysed. Theoretical material is collected, systematized and analysed according to the possible methods of analyte detection and determination in the experimental part of the final work topic, the possibilities of using the methods are evaluated, chemical experiments are performed using different methods, the optimal analysis method is selected. Tools and materials for selected analysis are prepared. Chemical / biochemical analysis is planned and performed according to the chosen topic of the final work. The results of the analysis are presented and evaluated, the quality parameters of the chemical analysis are determined, the factors influencing the magnitude of the uncertainty of the analysis results are identified. Laboratory, fire and human and nature safety are described. |
| **Study programme LANDSCAPE DESIGN** | | |
| Landscape Architecture | 6 | Students should be aware of garden design principles. During the course they will analyze situation of site and will prepare the private garden in residential area project. |
| Herbaceous Ornamental Plants II | 3 | Overview: selection of a range of flower beds in a naturalistic style, the principles of combination, ecology, and the creation and maintenance of a flower bed. |
| Environmental Engineering | 8 | The evaluation of Environmental Engineering and green design demand to different purpose objects. Advanced technologies of Environmental Engineering development. Experimental and virtual modeling of Environmental Engineering. Evaluation and improvement of Environmental Engineering process. Environmental Engineering industry technologies to different objects. Environmental Engineering, start-up to market at continually changeable environment. Complex evaluation of green design system. |
| Practical Training of Applied Dendrology | 4 | Introduction of the most common cultivated species and cultivars of gymnosperms and woody angiosperms grow and growing in Lithuania. Developing of ability to construct green areas using wooded ornamental plants. Developing of plant identification ability. |
| Applied Practice of Herbaceous Ornamental Plants | 4 | Students will learn to determine the decorative properties of plants and the peculiarities of their manifestation. Abilities to group the observed are developed ornamental herbaceous plants according to their application in greenery. Description of herbaceous ornamental plants (recognition) in outdoor collections. The growth conditions of herbaceous ornamental plants are analysed, ornamental plants are taught herbal plant propagation. |
| Practice of Maintenance Technologies for Greeneries | 4 | Students will learn about ornamental plants growing and maintenance, plant protection measures and performance is analyzed. How to plan, organize the process of maintenance technologies for greeneries according to labor and civil requirements is analyzed. |
| Basics of Landscaping | 6 | Students will learn about the construction structures of environmental engineering and |

| | | |
|---|---|---|
| Constructions | | landscaping structures belonging to the category of uncomplicated structures, their construction or construction, the selection, adaptation and construction planning of landscaping structures and facilities are examined, the specifications and descriptions for the selection of materials and products are prepared. |
| **Study programme FOOD TECHNOLOGY** | | |
| Food Safety and Quality | 10 | While studying the module students analyse the EU and Lithuanian legal acts, general, compulsory, veterinary, food safety and quality requirements, self-control system and principles, foodstuff labelling, storage and transportation requirements, programme for the product detention and withdrawal from the market, freshness of raw materials and foodstuffs, possible contamination, ways to protect consumers from potential illness, environmental bacteria, microorganism metabolic features. Students study modern sensory food quality research and evaluation methods, their influence on the development process of a new food product, improvement of existing products and selection of new raw materials. |
| General Technological and Food Quality Practical Training | 10 | In the company where the practice is performed, students get acquainted with food industry activities, improve professional skills by working in production units, examine different stages of food production and technological parameters, familiarize with the equipment, raw materials, finished product quality, hygiene and sanitation requirements. |
| Environmental Protection and Sustainable Production | 4 | Knowledge is provided about the quality of the environment and its changing trends. Environmental factors, their influence on the main components of the environment, sources of pollution and ways of reducing it are analysed. Sustainable technological processes, management of waste generated in the technological process are reviewed. Issues addressed are related to sustainable food consumption and food waste. |
| **Study programme VETERINARY** | | |
| Animal Physiology | 6 | Physiological processes, mechanisms, course and significance of animal cells, tissues, organs, organ systems and organism are studied. |
| Animal Welfare | 5 | Demonstrating the rational application of animal welfare and environmental legislation requirements for the analysis, assessment and management of animal welfare and animal housing technological processes. Introducing general animal welfare laws and principles. |
| Diagnostic Imaging | 4 | Students are introduced to the operating principles of diagnostic imaging methods, existing legal regulations, different diagnostic capabilities of various methods, indications and contraindications for use, equipment care and preparation of the animal for diagnostic procedures. |
| Microbiology | 3 | The morphology, physiology and prevalence of microorganisms in nature and infectious diseases caused by them are reviewed. Methods for diagnosing these diseases and preventive measures are shown. |
| Parasitology | 4 | The morphology, physiology and distribution of parasites in nature are reviewed, and invasive diseases caused by them are analyzed. Methods of diagnosing these diseases and preventive measures are demonstrated. |
| Pharmacology and drug administration | 3 | The groups of preparations used in veterinary medicine are reviewed, the principles of action of pharmaceuticals are analyzed and the methods of pharmaceuticals delivery to the animal are demonstrated. |
| Pet Nursing Professional Practice | 10 | The technique of performing small animal surgical and obstetic operations is analyzed. Animal fixation techniques are and drug delivery techniques are presented. Evaluation of diagnostic methods are analyzed, small animal species, varieties, their needs are reviewed. |