VILNIAUS KOLEGIJA | AGROTECHNOLOGIJŲ FAKULTETAS

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It is brought to your kind notice that information which is below could be changed according to unforeseen circumstances.

## AUTUMN SEMESTER

| COURSE TITLE | ECTS CREDITS | SUMMARY |
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| **Study programme APPLIED CHEMICAL ANALYSIS** | | |
| **Biochemical Analysis** | 6 | The aim of the subject is to acquaint students with the most important bioorganic compounds used in biotechnology, master modern methods of protein and nucleic acid analysis and application, analyse qualitative and quantitative parameters and detection methods of molecular biology reagents, form skills to apply basic methods used in biotechnology laboratory: electrophoresis of protein and nucleic acid and their concentration assessment |
| **Chromatographic Analysis** | 9 | 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. |
| **Extraction and Purification of Bioproducts** | 6 | The aim of the subject is to acquaint students with the sources of bioproducts, their characteristics and application, analyse quality requirements for bioproducts and the requirements for water used in bioproduction. Students study extraction methods of endo-, exoproducts and nucleic acid, application of chromatographic purification method, develop practical chromatographic purification skills, familiarise with the used equipment operating principles and opportunities, analyse exceptional requirements set for working in a controlled environment, as well as bioproduct storage and transportation conditions. |
| **Microbiology** | 3 | While studying the subject students examine the objects, aims and objectives of microbiology, get acquainted with microorganism cell structure, physical, chemical and biological factors on microorganisms, their physiology and systematics of microorganisms. Students are introduced to the microscopic structure, working principle of the microscope, microscopic preparations, develop initial microscope skills, get acquainted with microorganism cultivation principles, learn to prepare the nutrient media and develop microorganism quantitative determination skills, study sterilisation and disinfection principles, as well as microorganism preservation and storage techniques. |
| **Training practice of chemical analysis quality** | 4 | In the laboratory students carry out chemical analysis measurements to determine the characteristics of method verification: limit of detection and limit of quantification, trueness, precision and expanded uncertainty; examine control and blank samples; construct the calibration curve (for spectrophotometric analysis methods), make control charts, and evaluate the obtained results by statistical methods. |
| **Study programme VETERINARY MEDICINE** | | |
| **Propaedeutics of Internal Diseases** | 10 | During the studies, the principles of animal admission to the clinic, their care and nursing are examined, with special attention paid to the development of practical skills. Students are taught to assess the clinical condition of animals, provide first aid, and prepare animals for examinations and procedures according to the instructions of a veterinarian. They are introduced to diagnostic methods for non-communicable diseases, their application, and planning of preventive measures. They also develop the skills of communicating with clients - to prescribe medications and explain the peculiarities of their use, in order to ensure comprehensive animal health care in a clinical environment. |
| **Nursing Process and Clinical Skills II** | 5 | During the studies, the principles of animal preparation for diagnostic, therapeutic and surgical procedures, animal care before and after operations are examined. The importance of the preparation of the operating environment, tools and clinic in ensuring the safety of procedures is analyzed. Students are taught to independently perform autopsies of pet and agricultural animal carcasses, assess pathological changes in organs and systems. They are introduced to the practice of assisting a veterinarian during interventional procedures. The ability to apply theoretical knowledge in practice is developed, clinical thinking and decision-making skills in veterinary practice are developed. |
| **Epidemiology** | 5 | The morphology, physiology and prevalence of microorganisms in nature and infectious diseases caused by them are reviewed. Methods of diagnosing these diseases and prophylactic-anti-epizootic measures are shown. Knowledge and skills necessary for the differentiation and identification of these diseases and the use of pre-epizootic measures are developed. |
| **Surgery** | 10 | There are reviewed the principles and methods of treatment of surgical diseases, pathological processes, their causes and auxiliary measures, prophylaxis of surgical infection, surgical diseases of the skin, blood vessels, lymph nodes, head, muscles, internal organs. There are demonstrated the work with surgical instruments and tools, the proper use of pharmaceutical veterinary medicines for the prevention and treatment of diseases. There are analyzed the work with clinical equipment, the diagnosis of surgical diseases by various methods, the technique of surgical operations. |
| **Study programme AGRIBUSINESS TECHNOLOGIES** | | |
| **Marketing and Market Research** | 4 | Students are introduced to strategic and operational agricultural marketing. They are taught to apply market research principles and methods in analysing and solving problems related to the production and sale of agricultural products. |

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| **Communication (Introduction to Studies)** | 4 | Practical aspects of communication, forms, tools and channels are discussed. Students learn how to analyse communication factors in business enterprises and the principles of negotiation and image building. Students learn how to apply the principles of communication and cooperation in practice, how to form teams, how to organise and negotiate, how to resolve conflicts. The student will develop the ability to work independently and the ability to learn. |
| **Agricultural Chemistry and Research** | 3 | A systemic understanding is developed of the chemical composition of water, soil, and agricultural raw materials, as well as the importance of fertilizers for soil fertility. The main chemical reactions occurring in plants and soils are examined, together with the patterns that directly determine plant productivity. Key methods for the analysis of soil, water, and agricultural raw materials are studied, enabling chemical analysis and interpretation of research results. Students are introduced to the quality requirements applied to water, soil, and agricultural raw materials, which are essential for sustainable agriculture. |
| **Study programme LANDSCAPE DESIGN** | | |
| **Green Infrastructure Development** | 6 | The subject is designed to introduce students to the integration of green infrastructure principles in urbanized areas, its forms, the green index. Examples of good practices from foreign countries are studied in accordance with the requirements of the Green Course and Eco design Directive, as well as the green index indicators. A design proposal for a green infrastructure facility is prepared. |
| **Practice of Computer Design** | 5 | Students will learn to create and edit landscape visualizations using SketchUp and Lumion software, applying various materials, textures, and lighting effects. They will be able to produce realistic animations and video presentations, applying creative and innovative solutions in their visualizations. Students will also gain skills in clearly and persuasively presenting their work, preparing it in different formats according to client needs. |
| **Herbaceous Ornamental Plants I** | 5 | The application area, purpose and classification of herbaceous ornamental plants are reviewed. Introduced to flowers cultivation, maintenance, propagation technologies. The selection of flower assortment for flower gardens is reviewed. |
| **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. |
| **Applied dendrology** | 5 | Morphological and systematic background knowledge is provided as well as knowledge about the most common genera of gymnosperms and woody angiosperms grown and growing in Lithuania, their species and cultivars. Introduction in to the possibilities of using woody ornamental plants in landscaping. Developing of plant identification abilities. |
| **Study programme FOOD TECHNOLOGY** | | |
| **Non-Animal Origin Food Technologies and Equipment** | 10 | While studying the module students get acquainted with the chemical composition of foodstuff, foodstuffs safety, sanitary and hygiene requirements, analyse foodstuffs technologies and quality of raw materials. |
| **Special Technologies Practical Training (Catering Enterprises Production Technology)** | 10 | The aim of the module is to overview the activities of the company and to analyse types of catering enterprises, the organization of work in production units and service opportunities. Students familiarize with the documents available in food companies: regulatory acts, hygiene requirements, equipment utilization and operating rules, visitor surveys, questionnaires, etiquette and ethics requirements. Students are involved in dish preparation, menu compilation and customer service processes. |