



Sumy  
National  
Agrarian  
University

# **SUMY NATIONAL AGRARIAN UNIVERSITY**

## **STUDY COURSES IN ENGLISH**

**Academic Year  
2023-2024**

	Subject	Winter semester	Summer semester
<b>Faculty of economics and management</b>			
1	Agricultural policy		<input type="checkbox"/>
2	Analysis and control of the enterprise	<input type="checkbox"/>	
3	Business management	<input type="checkbox"/>	
4	Economic informatics	<input type="checkbox"/>	
5	Enterprise planning		<input type="checkbox"/>
6	Management consulting		<input type="checkbox"/>
7	Methodology of scientific research and support of the principles of academic integrity	<input type="checkbox"/>	
8	Methods of empirical and social research	<input type="checkbox"/>	
9	Production economics	<input type="checkbox"/>	
10	Project planning and evaluation	<input type="checkbox"/>	
11	Strategies of international agrarian marketing		<input type="checkbox"/>
<b>Faculty of law</b>			
12	History of international relations	<input type="checkbox"/>	
13	Theory of international relations		<input type="checkbox"/>
14	Public international law	<input type="checkbox"/>	<input type="checkbox"/>
15	European union law	<input type="checkbox"/>	<input type="checkbox"/>
16	International protection of human rights	<input type="checkbox"/>	
17	Comparative law	<input type="checkbox"/>	
18	Public speaking in international and diplomatic spheres	<input type="checkbox"/>	<input type="checkbox"/>
19	International and comparative labour law	<input type="checkbox"/>	



20	General theory of law	<input type="checkbox"/>	<input type="checkbox"/>
21	International criminal law	<input type="checkbox"/>	<input type="checkbox"/>
22	History of state and law of Ukraine and the foreign countries	<input type="checkbox"/>	<input type="checkbox"/>
<b>Faculty of agrotechnologies and natural resource management</b>			
23	Use and maintenance of park facilities		<input type="checkbox"/>
24	Intellectual property		<input type="checkbox"/>
25	Greenhouse economy		<input type="checkbox"/>
26	Forestry		<input type="checkbox"/>
27	Dendrodesign		<input type="checkbox"/>
28	Varietal resources and their formation		<input type="checkbox"/>
29	Management and marketing of green economy		<input type="checkbox"/>
30	Lawn		<input type="checkbox"/>
<b>Faculty of veterinary medicine</b>			
31	Cytology, histology, embriology		<input type="checkbox"/>
32	Veterinary pathology	<input type="checkbox"/>	
33	Ethology and animal welfare		<input type="checkbox"/>
34	Bioethics, biosafety, bioprotection and ecology	<input type="checkbox"/>	
35	Veterinary hygiene and animal husbandry sanitation		<input type="checkbox"/>
36	Production, safety and hygiene of fodder and feed additives		<input type="checkbox"/>
37	Veterinary international and national legislation		<input type="checkbox"/>
38	Veterinary and sanitary inspection of livestock products, hydrobionts, honey and plant products	<input type="checkbox"/>	
39	System of analysis of dangerous factors and control at critical points (haccp)		<input type="checkbox"/>
40	Forensic veterinary examination	<input type="checkbox"/>	

41	Veterinary business and entrepreneurship		<input type="checkbox"/>
42	Marketing management in veterinary medicine	<input type="checkbox"/>	
<b>Faculty of food technologies</b>			
43	Innovative technologies in enterprises of the industry	<input type="checkbox"/>	<input type="checkbox"/>
44	Low-temperature and extrusion technologies		<input type="checkbox"/>
45	Research work	<input type="checkbox"/>	<input type="checkbox"/>
46	Fundamentals of bioplastics technologies		<input type="checkbox"/>
47	Innovative engineering		<input type="checkbox"/>
48	Energy management and energy audit of processing and food enterprises	<input type="checkbox"/>	
49	Innovative food ingredients		<input type="checkbox"/>
50	Food quality management		<input type="checkbox"/>
51	Modern advances of food science		<input type="checkbox"/>
52	Information technologies and optimization of technical and technological objects of the industry		<input type="checkbox"/>
53	Special food technology	<input type="checkbox"/>	
<b>Faculty of biology and technology</b>			
54	Biotechnology	<input type="checkbox"/>	
55	Modern methods of assessing the quality of livestock products	<input type="checkbox"/>	
56	Technology of poultry production	<input type="checkbox"/>	
<b>Faculty of engineering and technology</b>			
57	Communications in the international environment and higher education pedagogy		<input type="checkbox"/>
58	Computer mathematics and elements of programming	<input type="checkbox"/>	
59	3D-modeling in engineering	<input type="checkbox"/>	
60	Occupational health	<input type="checkbox"/>	



Sumy  
National  
Agrarian  
University

61	Physics of processes and mathematical methods of scientific research	<input type="checkbox"/>	
62	Time management		<input type="checkbox"/>
<b>Faculty of construction and transport</b>			
63	Theory of Operational Properties of Vehicles	<input type="checkbox"/>	

## **AGRICULTURAL POLICY**

**D.Sc. (Econ.), Professor Olena Slavkova**  
**Sumy National Agrarian University**

### **Abstract**

The purpose of studying the discipline "Agricultural Policy" is the formation of theoretical knowledge and practical skills to master the methodological aspects of practical application of the basics of formation and implementation of agricultural policy, evaluation and justification of its effectiveness and skills in state regulation of the agricultural sector. You will receive more detailed information inside the course.

### **Course structure**

Topic 1. Theoretical foundations of agricultural policy.

Topic 2. Transformation of agricultural policy of Ukraine: historical experience and modern practice.

Topic 3. The main directions of agricultural policy of Ukraine.

Topic 4. Problems of food security in Ukraine.

Topic 5. Organizational and economic components of agricultural policy.

Topic 6. Tools for regulating the agricultural sector.

Topic 7. Development of the agricultural sector of Ukraine in the context of globalization of world markets.

Topic 8. Tools for regulating foreign trade in agricultural products.

Hours per week/ Credits

4 SWS/ 5 ECTS

Credit

## **ANALYSIS AND CONTROL OF THE ENTERPRISE**

**Prof. Dr. Alina Brychko**  
**Sumy National Agrarian University**

### **Abstract**

The purpose of studying the discipline "Analysis and control of the enterprise" providing students with theoretical knowledge and practical skills for continuous, interconnected, strictly documented observation of the economic activity of enterprises and the accumulation of information about this activity and the use of information for making management decisions. Get acquainted with the global experience of accounting and control at the enterprise.

The course is offered in 5 ECTS version. You will receive more detailed information inside the course.

### **Course structure**

- Theme 1. An enterprise as a basic element of industry
- Theme 2. Essence, objectives and types of economic analysis
- Theme 3. Methods and methodology of economic analysis
- Theme 4. Organization of Economic Analysis
- Theme 5. Theoretical basis of the financial analysis
- Theme 6. Analysis of financial results of the enterprise
- Theme 7. Analysis of the fixed assets
- Theme 8. Analysis of production costs
- Theme 9. Analysis of the financial condition of the company
- Theme 10. Management analysis as part of management accounting
- Theme 11. Analysis of organizational and technical level of production
- Theme 12. Analysis of production and sales
- Theme 13. Portfolio analysis as a basis for strategic management analysis
- Theme 14. Strategic analysis as a basis for making strategic management decisions
- Theme 15. Forecasting
- Theme 16. Facility planning
- Theme 17. Production Planning and Control
- Theme 18. Entrepreneurial motivation
- Theme 19. Control Structure and Types of Control
- Theme 20. Management Control Systems
- Theme 21. Strategic accounting and control
- Theme 22. Controlling as a tool for management
- Theme 23. Auditing and Implementation of Management Control Systems

Hours per week/ Credits  
5 SWS/ 5 ECTS

Exam

## **BUSINESS MANAGEMENT**

**Prof. Dr. Svitlana Lukash**  
**Sumy National Agrarian University**

### **Abstract**

The purpose of studying the discipline "Business Management" is to provide students with thorough knowledge about the goals of the enterprise's operation, familiarization with possible legal forms of management, the basics of production and investment theory of enterprise creation, as well as the main methods of economic analysis and planning. The course is offered in 5 ECTS version. You will receive more detailed information inside the course.

### **Course structure**

Introduction to Business management.

Topic 1. Scientific and economic foundations of business management.

Topic 2. Tasks and qualifications of the manager.

Topic 3. Concepts of business ethics.

Topic 4. Benchmarking in Business management.

Topic 5. Concept of a business plan and its structure.

Topic 6. Factors of production.

Topic 7. Classification of costs and revenues in agricultural enterprises (inputs and outputs).

Topic 8. Fixed assets: essence and effectiveness of their use.

Topic 9. Basic aspects of the economy of labor resources.

Topic 10. Personnel management, remuneration systems.

Topic 11. Motivation theory, conflict resolution.

Topic 12. Basics of production theory.

Topic 13. Managerial analysis of economic activities

Topic 14. Planning of enterprise activities using software planning II.

Topic 15. Simplified planning of the enterprise by the program planning method I.

Topic 16. Introduction to multiperiodical calculations of investment efficiency.

Hours per week/ Credits

5 SWS/ 5 ECTS

Exam



## **ECONOMIC INFORMATICS**

**Associate Prof., Ph.D Svitlana Ahadzhanova**  
**Sumy National Agrarian University**

### **Abstract**

The course "Economic Informatics" highlights the main principles and methods of applying modern information technologies in solving economic problems. The purpose of the course is to form in future professionals the necessary level of information and computer culture, the acquisition of practical skills in PC and the use of modern information technology to solve various problems in the process of learning and working in the specialty. The acquired skills of working on a personal computer with an operating system and major software packages such as MS Word, MS Power Point, MS Excel and online systems will enhance the performance of the tasks by future specialists. The course is offered in 3 ECTS version. You will receive more detailed information inside the course.

### **Course structure**

**Economic Informatics.**

Topic 1. Concept of economic information.

Topic 2. Automation of data entry and processing, analysis.

Topic 3. Prediction and forecasting.

Topic 4. Regression and correlation analysis of data.

Topic 5. Solving linear programming problems.

Topic 6. Simplex method.

Topic 7. Transportation problem

Hours per week/ Credits

4 SWS/ 2,5 ECTS

Credit

## **ENTERPRISE PLANNING**

**Prof. Dr. Valeriia Shcherbak**  
**Sumy National Agrarian University**

### **Abstract**

"Enterprise Planning" is a comprehensive course that explores the fundamental principles and practical applications of strategic business planning, encompassing topics ranging from the essence of planning, marketing research, and production optimization to financial planning, personnel management, and business plan development, offering students a holistic understanding of how effective planning is essential for the success and sustainability of modern enterprises in today's dynamic business environment.

The course is offered in 5 ECTS version. You will receive more detailed information inside the course.

### **Course structure**

Introduction to Enterprise planning.

Topic 1. The essence of planning and its implementation on an enterprise.

Topic 2. Enterprise planning systems.

Topic 3. Marketing research, sales planning, and product control.

Topic 4. Production of goods.

Topic 5. Operational and calendar planning and control.

Topic 6. Material and technical support for production.

Topic 7. Ensuring operational activity with production capacity.

Topic 8. Personnel and compensation.

Topic 9. Production infrastructure.

Topic 10. Production costs.

Topic 11. Financial planning and control at the enterprise.

Topic 12. Planning and control of product renewal.

Topic 13. Organizational and technical development.

Topic 14. Business planning.

Hours per week/ Credits

5 SWS/ 5 ECTS

Exam

## **MANAGEMENT CONSULTING**

**Prof. Dr. Alina Brychko**  
**Sumy National Agrarian University**

### **Abstract**

The purpose of studying the discipline "Management Consulting" is to equip future professionals with systematic and generalized knowledge about important methods of determining the optimal organization of the enterprise through applied business planning.

The course is offered in 5 ECTS version. You will receive more detailed information inside the course.

### **Course structure**

- Theme 1. Nature and purpose of management consulting
- Theme 2. The consulting industry
- Theme 3. The consultant–client relationship
- Theme 4. Fundamentals of management in the consulting profession
- Theme 5. Enterprise planning: general economic principles and methods
- Theme 6. Characteristics of the enterprise
- Theme 7. Introduction to linear programming for farm business planning
- Theme 8. Introduction to linear programming for farm business planning using the optimization software XA and MS Excel
- Theme 9. Introduction to multi-period calculations of investment efficiency

Hours per week/ Credits  
5 SWS/ 5 ECTS

Exam

**Methodology of scientific research and support  
of the principles of academic integrity**

**Prof. Dr. Tetiana Kharchenko**  
**Sumy National Agrarian University**

**Abstract**

The purpose of studying the discipline "Methodology of scientific research and support of the principles of academic integrity" is to provide students with thorough knowledge about the modern methodology of scientific knowledge and the latest methods of scientific research, expanding their general outlook and erudition, independent and creative use of general scientific methodology in the course of scientific research and practical activities. The course is offered in 5 ECTS version. You will receive more detailed information inside the course.

**Course structure**

- Topic 1. Science and its elements.
- Topic 2. General theoretical foundations of scientific knowledge.
- Topic 3. Scientific research and methods of its implementation in the field of management.
- Topic 4. Stages of scientific research.
- Topic 5. Methods of scientific research.
- Topic 6. Information provision of scientific research.
- Topic 7. Organization of research work.
- Topic 8. The essence of academic integrity and its fundamental values.
- Topic 9. Principles of the academic integrity system.
- Topic 10. Plagiarism, its detection methods and prevention measures.

Hours per week/ Credits  
4 SWS/ 5 ECTS

Exam

**METHODS OF EMPIRICAL AND SOCIAL RESEARCH**

**Prof. Dr. Nataliya Stoyanets**  
**Sumy National Agrarian University**

**Abstract**

The educational component "Economic Informatics and Methods of Empirical and Social Research" refers to a cycle of disciplines that form the applicant's profile and provide an opportunity to gain knowledge about the peculiarities of scientific activity, the content and potential of various empirical methods; to develop the skills and abilities of practical application of appropriate methods during research, interpretation of the obtained data for writing master's theses and scientific articles.

The course is offered in 5 ECTS version. You will receive more detailed information inside the course.

**Course structure**

Introduction to and Methods of Empirical and Social Research.

Topic 1. Topic 1: Characteristics of methods of empirical cognition, features of their application in social work.

Topic 2. Theories of empirical research.

Topic 3. Definitions and documents in sociological empirical research.

Topic 4. The sample of empirical studies

Topic 5. Empirical observation as a method of collecting primary social information. Topic

Topic 6. Social experiment and its purpose.

Topic 7: The method of comparison in empirical sociological research.

Topic 8: Method of measurement in empirical sociological research.

Topic 9: Sociometry as a type of empirical study of interpersonal relationships in the group.

Topic 10: The role of surveys in the collection of primary social information.

Topic 11: Telephone survey, its advantages, disadvantages, purpose.

Topic 12: Methods of collecting information.

Topic 13. The specifics of the interview and its organization.

Topic 14. Questionnaire as the main tool of sociological research.

Topic 15. Scientific documents and their classification.

Hours per week/ Credits

5 SWS/ 2,5 ECTS

Test

## **PRODUCTION ECONOMICS**

**Prof. Dr. Svitlana Lukash**  
**Sumy National Agrarian University**

### **Abstract**

The purpose of studying the discipline "Production Economics" is the formation of students' theoretical and practical knowledge in the field of production economics, necessary for achieving commercial goals in business, as well as the formation of economic thinking, entrepreneurial and commercial approach to solving production tasks

### **Course structure**

Introduction to Production economics.

Topic 1. Methods of evaluating production processes.

Topic 2. Assessment of the need for circulating capital.

Topic 3. General economic aspects of crop production.

Topic 4. Economic evaluation of production process: Production of marketable plant products.

Topic 5. Economic evaluation of the production process: Production of fodder crops.

Topic 6. General economic aspects of livestock production.

Topic 7. Economic evaluation of the production process: Dairy farming.

Topic 8. Economic evaluation of production process: Breeding and fattening of cattle (breeding heifers and fattening bulls).

Topic 9. Economic evaluation of the production process: Breeding pig farming.

Topic 10. Economic evaluation of production process: Pig fattening.

Hours per week/ Credits

5 SWS/ 5 ECTS

Exam

## PROJECT PLANNING AND EVALUATION

**Senior teacher, Ph.D. Public Administration  
Sumy National Agrarian University**

### Abstract

The purpose of studying the discipline "Project planning and evaluation" is to formation of a system of theoretical knowledge regarding the choice and justification of the project , construction of the organizational structure of the project, opportunities for attracting resources and defining key conditions for its successful implementation; mastering methodological tools in project management; acquisition of practical decision-making skills in the process of substantiation of project selection and implementation, its structuring, financial and organizational support, content management, approaches to monitoring and evaluation.

The objective of the course is to provide students with a scientific and methodological basis for mastering the general provisions, principles and methods of organizing the project planning and evaluation system, project initiation, structuring, economic justification for the feasibility of implementation , content management , cost and quality of project work, human resource management project and risk assessment. The course is offered in 5 ECTS version. You will receive more detailed information inside the course.

### Course structure

- Topic 1. Project analysis and project concept.
- Topic 2. Project life cycle.
- Topic 3. Project initiation actions.
- Topic 4. Project integration and content management.
- Topic 5. Project time management.
- Topic 6. Project quality management.
- Topic 7. Development of project financial resources.
- Topic 8. The concept of costs and benefits in project management.
- Topic 9. Value for money over time. Project cash flow.
- Topic 10. Project Decision Criteria.
- Topic 11. Project Risk Assessment.
- Topic 12. Formation and development of the project team
- Topic 13. Fundamentals of project monitoring and evaluation.
- Topic 14. Management of the project monitoring process.

Hours per week/ Credits  
4 SWS / 5 ECTS

Exam

**STRATEGIES OF INTERNATIONAL AGRARIAN MARKETING**

**Prof. Dr. Svitlana Lukash**  
**Sumy National Agrarian University**

**Abstract**

The purpose of studying the discipline "Strategies of international agrarian marketing" is the formation of students' theoretical and practical knowledge in conducting marketing activities in agriculture needed to achieve commercial objectives of the business.

Objectives: holistic formation of students' imagination about the specifics of marketing in agriculture; mastering categorical apparatus used in carrying out marketing activities; forming a system of knowledge about the theoretical foundations marketing environment analysis and evaluation of its attractiveness for activities in the agricultural sector; assimilation methods for processing and marketing information in business; identification of key components and features of building marketing policy on agricultural markets; forms of cooperation between business partners in trading networks; features of communication policy on agricultural markets; especially the formation of a marketing policy on agricultural commodity markets; studying the peculiarities of different marketing strategies; understanding of marketing communication policy on agricultural markets; acquiring skills in shaping marketing policies of the company; provide a framework for the usage of theoretical knowledge in practice.

**Course structure**

Introduction to Strategies of international agrarian marketing

Topic 1. View of the marketing process

Topic 2. Agrarian marketing

Topic 3. Nature of strategic international marketing

Topic 4. Trade theories and economic development

Topic 5. Trade distortions and marketing barriers

Topic 6. Consumer behavior in the international context

Topic 7. Marketing research and information system

Topic 8. Foreign market entry strategies

Topic 9. Product strategies: Basic decisions and product planning

Topic 10. Product strategies: Branding and packaging decisions

Topic 11. Channels of distribution

Topic 12. Physical distribution and documentation

Topic 13. Promotion strategies: personal selling, publicity, and sales promotion

Topic 14. Promotion strategies: advertising

Topic 15. Pricing strategies: basic decisions

Topic 16. Pricing strategies: countertrade and terms of sale/payment

Topic 17. Sources of financing and international money markets

Topic 18. Currencies and foreign exchange

Hours per week/ Credits

4 SWS/ 5 ECTS

Exam



## **History of International Relations**

**Ass. Prof., PhD Nataliia Volchenko**  
**Sumy National Agrarian University**

### **Abstract**

The course “History of International Relations” allows to acquire thorough and systematic theoretical knowledge about the processes and phenomena of world society, to reveal the main trends in world politics and features of international relations in different historical periods of the modern world.

The task of the course: to form learning outcomes that will ensure that students achieve the appropriate program’s learning outcomes after the completion of the educational program. In particular, the educational component “History of International Relations” forms a block of knowledge, skills and competencies needed to form a system of knowledge on economic, political, ideological, legal, diplomatic, military and other ties and relations between states and systems, political forces, organizations and movements operating in the international arena; deepens knowledge of the need to take into account the impact of past events on the development of international relations for the practical application of acquired knowledge and take into account previous experience to predict the possible consequences of international relations.

The course is offered in a 5 ECTS version. You will receive more detailed information inside the course.

### **Course structure**

1. Introduction of the discipline “History of International Relations”
2. General characteristics of the Westphalian and Vienna systems of international relations
3. International relations during the First World War (1914 - 1918)
4. International relations between the two world wars
5. International relations during the Second World War (1939 - 1945)
6. International relations in the period after the Second World War and until the early 70’s
7. International relations in the second half of the 70’s - early 80’s of the twentieth century
8. Modern system of international relations. Globalization of international relations
9. The pan-European process and its role in ending the era of bloc confrontation
10. International consequences of the collapse of the USSR and the emergence of new independent states
11. The end of the Cold War and new parameters of international and European security
12. Problems of arms control and the process of disarmament
13. International relations in the East
14. Latin American and African countries in modern international relations
15. Current state and prospects of development of the system of international relations

Hours per week / Credits

4 SWS / 5 ECTS

Exam

Written examination

## **Theory of International Relations**

**Ass. Prof., PhD Nataliia Volchenko**

**Sumy National Agrarian University**

### **Abstract**

The course “Theory of International Relations” allows students to form results, which will ensure that they achieve the appropriate program learning outcomes after the completion of the educational program. In particular, the educational component “Theory of International Relations” forms a block of knowledge, skills and competencies necessary for the formation of knowledge on the theory and practice of relations between states, international intergovernmental and non-governmental organizations, transnational corporations, subnational territorial units and individuals in modern conditions; deepens knowledge of the need to take into account existing paradigms, principles, norms, laws of interaction of various actors in the development of international relations for the practical application of acquired knowledge and forecasting the possible consequences of international relations.

The aim is to provide students with thorough and systematic theoretical knowledge about the content, specifics and patterns of international relations, classical traditions and paradigms in their study, modern schools and trends, norms of international relations, goals and interests of participants, place and role of Ukraine in modern international relations.

The course is offered in a 5 ECTS version. You will receive more detailed information inside the course.

### **Course structure**

1. Introduction to the theory of international relations
2. Traditions and paradigms in the theory of international relations
3. The environment of the international relations' system
4. Participants in international relations
5. National interests: concept, structure, political role
6. The concept of power in international relations
7. International security
8. Legal regulation of international relations
9. International organizations as a mechanism of international relations' regulation
10. Diplomacy as a means of international relations' regulation
11. Conflicts in international relations
12. International cooperation
13. International order at the beginning of the XXI century

Hours per week / Credits

4 SWS / 5 ECTS

Exam

Written examination

**Public International Law**

**Ass. Prof., PhD Nataliia Volchenko**

**Sumy National Agrarian University**

**Abstract**

Public International Law allows students to acquire a thorough and systematic knowledge of the principles and norms governing relations between states, international organizations and other subjects of public international law on the principles of equality, justice, rule of law and respect for human rights and fundamental freedoms. Course allows to form learning outcomes in the discipline, which will ensure that they achieve the appropriate program learning outcomes after the completion of the educational program. In particular, the educational component "Public International Law" forms a block of knowledge, skills and competencies necessary for the formation of knowledge on the theory and practice of international legal regulation of relations between states, international organizations and other subjects of public international law on the principles of equality, justice, the rule of law and respect for human rights and fundamental freedoms. The course provides students with a system of general theoretical knowledge of international law; teaches to work with international treaties, other international acts and interpret them in accordance with specific situations of international life, as well as to assess current political developments in the light of international law

The course is offered in a 10 ECTS version. You will receive more detailed information inside the course.

**Course structure**

1. The nature and development of international law
2. A brief history of public international law
3. Basic principles of public international law
4. Sources of international law
5. Norms of international law
6. Relationship between international and national law
7. Subjects of international law
8. International legal recognition and succession
9. Territory in international law
10. Sovereignty in international law
11. Jurisdiction
12. Immunities from jurisdiction
13. Responsibility of the state
14. The law of international treaties
15. The law of foreign relations
16. Human rights and international law
17. Regional protection of human rights

18. Individual criminal responsibility in international law
19. Law of international organizations
20. United Nations
21. Peaceful Settlement of disputes
22. International Court of Justice
23. International law and the use of force by states
24. International law in times of armed conflict. International humanitarian law
25. International maritime law
26. International air and space law
27. International environmental law
28. International regulation of international economic relations
29. Fundamentals of international legal regulation of agrarian relations
30. European Union law

Hours per week / Credits (2 semesters)  
4 SWS /10 ECTS

Exam  
Written examination

**European Union Law**

**Ass. Prof., PhD Nataliia Volchenko**  
**Sumy National Agrarian University**

**Abstract**

The basics of European Union law are an independent legal system. The need to study EU law is primarily related to the improvement of the general legal culture of lawyers, an important component of which is knowledge of the main concepts, grounds, and categories of foreign law. In the process of studying the course, students should familiarize themselves with European law as an independent legal field, which occupies an intermediate position in the relevant relations between the national law of European states and international law. The purpose of the educational component: familiarization of students with the legal basis of the formation, construction and activity of the European Union; with the system of sources and norms of the law of the European Union, which regulate various types of social relations in which member states and citizens of the European Union, other natural and legal entities participate.

The course is offered in a 5 ECTS. You will receive more detailed information inside the course.

**Course structure**

1. Prerequisites for the emergence and main stages of the development of the European Union
2. The concept of EU law and its legal nature
3. Institutional system of the EU
4. Competence of the EU
5. Sources of EU law
6. Procedures for adoption of EU legal acts
7. System of legal protection in the EU
8. Protection of human rights in the EU
9. Common policies and areas of activity in the EU
10. Legal regulation of relations on the internal market in the EU
11. Legal regulation of external communications of the European Union
12. Legal regulation of cooperation between Ukraine and the European Union

Hours per week / Credits (2 semesters)

4 SWS /5 ECTS

**Exam**

Written examination

**International Protection of Human Rights**

**Ass. Prof., PhD Nataliia Volchenko**

**Sumy National Agrarian University**

**Abstract**

Course “International Protection of Human Rights” forms a block of knowledge, skills and competencies necessary for the formation of a knowledge system on the theory and practice of the international human rights protection, the work of judicial mechanisms. Students gain professional knowledge of the case law of the European Court of Human Rights, the UN Human Rights Committee and other legal and political bodies, acquire theoretical and practical knowledge of the legal nature of human rights and freedoms, forms and methods of their implementation, and elements and components of legal mechanism for protection of human rights and freedoms; acquire professional practical skills in identifying, selecting and implementing the most effective means of human rights protection.

The aim is to provide students with thorough and systematic scientific, theoretical and practical knowledge about the legal nature of human rights and freedoms, their implementation, as well as the system of its national and international protection.

The course is offered in a 5 ECTS. You will receive more detailed information inside the course.

**Course structure**

1. Introduction to international human rights law
2. Protection of human rights within the UN
3. European protection of human rights
4. Regional protection of human rights
5. The content of some basic rights
6. The content of some fundamental freedoms
7. The right to a fair trial and an effective remedy
8. International protection of human rights during armed conflicts

**Hours per week / Credits**

**4 SWS /5 ECTS**

**Exam**

**Written examination**

**Comparative Law**

**Nataliia Petrova**

**Associate Professor of the International Relations Chair**

**Sumy National Agrarian University**

**Abstract**

Comparative Law, as an academic discipline, provides the formation of the ability to solve complex specialized tasks in the field of law with an understanding of the nature and content of thorough knowledge of the basic legal families of today and the legal systems of individual countries, as well as skills of independent comparative law research of the main objects of state and legal reality.

The tasks: formation of students' scientific worldview and a system of guidelines for determining the place of a legal system on the legal map of the world; accumulation of knowledge about the legal systems of the world, their features, which directly or by analogy can be used to address atypical legal situations.

The purpose of study is a formation students' complete knowledge of the main modern legal families and the legal systems of individual countries belonging to legal families, as well as skills and abilities to independently conduct comparative legal research on the main objects of state and legal reality as a necessary element of professional legal thinking and professional legal culture.

The discipline Comparative Law is aimed at providing students with knowledge about: the theoretical foundations of comparative law; general patterns of origin, formation and development of national legal systems and their associations in the comparative aspect; legal systems as the main objects of comparative law; general characteristics of the legal system of Ukraine; general characteristics of Romano-Germanic, Anglo-American, Mixed, Religious, Far Eastern countries, Customary legal families.

**Course structure**

1. General characteristics of comparative law
2. The classification of legal systems of society.
3. Romano-Germanic legal family. General characteristics.
4. Anglo-American legal family. General characteristics.
5. The legal system of the United States as a subgroup of the Anglo-American legal family.
6. Mixed type of legal systems.
7. Traditional legal family. The law of the Far East. African traditional law. General characteristics.
8. Religious legal systems.

Hours per week / Credits

3 SWS /5 ECTS

Exam

Written examination



## Public Speaking in International and Diplomatic Spheres

**Ass. Prof. Dr. Nataliia Klietsova**  
**Sumy National Agrarian University**

### Abstract

This course designed to develop in the applicant's knowledge of public speaking and the ability to behave in online as well as offline speeches in the international and diplomatic spheres, which are necessary professional skills for all competent staff. In addition, the course develops students' skills in how to convince the client, judge or jury, talk to a group of business partners, shareholders or conference participants. This course covers all aspects of public speaking, from the preparation and structure of the presentation of the speech or conversation to the style, tone and presentation of its content to enhance body language communication and visual aids. *The purpose* is to prepare students' knowledge of speech skills as an integral value of the future profession, providing them with the useful practical skills. The course is offered in the 4 credits ECTS version and the 7 credits ECTS version.

### Course structure

1. The Concept of Public Speaking in Today's Conditions
2. Ethics in Public Speaking in International and Diplomatic Spheres
3. Presentation Aids: Design and Usage During International Negotiations
4. Storytelling as One of the Means of Self-presentation in Social Networks
5. Video as One of the Means of Self-presentation in Social Networks
6. Speaking Confidently on the International Level
7. The Art of Effective Listening to Public Speeches of Foreign Partners
8. Audience Analysis in Public Speaking with Foreign Partners
9. Finding the Purpose, Motivation and Choice of Topics for Public Speaking for the Foreign Delegations under Conditions of Sustainable Development
10. Introduction in Public Speaking in International and Diplomatic Spheres
11. The Language of the Speaker in Public Speeches at the International Level
12. Delivering the Speech to Foreign Partners
13. Informative, Persuasive and Entertain Speeches in Public Speaking with Foreign Partners

Hours per week / Credits  
2 SWS / 7 ECTS

### Credit

Recording video presenting the proposed assignment for 4 ECTS

Recording video presenting the proposed assignment by own research for 7 ECTS



**International and Comparative Labour Law**

**Prof. Dr. Svitlana Zapara**

**Ass. Prof. Dr. Nataliia Klietsova**

**Sumy National Agrarian University**

**Abstract**

This course designed to develop in the applicant's knowledge of international labour law, employment relations of foreign countries; activities of the International Labour Organization (ILO); understanding the problem and necessity of globalization, mobile workforce as well as the remote work in social and labour relations. The course orients the student to the modern understanding of social and labour relations, labour law, employment law, teaches to analyse social relations, identify key problems and trends in social and labour relations, taking into account the dynamics of their historical development. In addition, the course develops students' understanding of social conflict, competence to resolve it, in particular, provides knowledge of the procedure and features of collective bargaining, social dialogue, legal regulation of strikes, mediation. The purpose of the module is the formation of students' knowledge of the peculiarities of international labour law by applying them in foreign countries, using international treaties, acts of higher courts, educational and monographic literature; solve analytical problems and practical cases. The practical part of the course is mostly based on the simulation games. The course is offered in the 7 credits ECTS version.

**Course structure**

1. The Right of a Person to Work and International Guarantees of its Provision
2. General Characteristics of International Legal Regulation of Labour Law of Foreign Countries
3. Sources of Labour Law and Modern Models of Regulation of Social and Labour Relations under Conditions of Sustainable Development
4. Labour Relations. Subjects of Labour Relations
5. Labour Law in Europe: General Characteristics, Institutions
6. Labour Law of Ukraine
7. Legal Regulation of Labor Relations in France
8. Labour Relations in the United Kingdom
9. Legal Regulation of Labor Relations in Germany
10. Labor Relations in the USA
11. Labor Relations in China
2. Labor Relations in Japan
13. Social Partnership and Collective Labour Law
14. Labour Disputes

**Hours per week / Credits**

**2 SWS / 7 ECTS**

**Exam**

Assignment Consists of Two parts: 1) Passing Multiple Choice Test (30 questions) according to the learnt topics; 2) Written answer by solving the proposed case study or practical situation.

**General Theory of Law**

**Prof. Dr. Svitlana Zapara**  
**Ass. Prof. Dr. Nataliia Klietsova**  
**Sumy National Agrarian University**

**Abstract**

This course designed to develop in the applicant's knowledge of current issues of public relations' legal regulation, modern approaches to understanding the law and lawmaking, law enforcement and law creating mechanisms, providing and protecting human rights. In addition, the course forms students' understanding of the essence and basic features of law, the specifics of its sources, system, principles and norms of law, the structure of the legal system and the relationship between its main elements, features of basic legal families. Upon completion of the course, applicants should correctly interpret and apply the rules and principles of law, promote the implementation of human rights and the implementation of the rule of law in public relations and legal practice. The course orients the student to a modern understanding of law, which guarantees the limits of freedom, helps prevent conflicts, enables decent free human development, existence and functioning of society. The purpose of the module: the formation of students' knowledge of the nature and forms of law, its functioning and development, competencies for the usage of general theoretical categorical apparatus of jurisprudence in legal education and professional activities. The practical part of the course is mostly based on the simulation games by the motives of the famous serial "Game of Thrones". The course is offered in the 7 credits ECTS version.

**Course structure**

1. Introduction. The Main Approaches to Legal Understanding
2. Law and Man. Human Rights
3. Principles of Law
4. Social Regulation and Law
5. Legal Regulation
6. Law and State
7. Rules of Law
8. The System of Law
9. Sources of Law
10. The System of Regulatory Legal Acts
11. Law-making and Law-creating (Rule-making)
12. Concept and Content of Legal Relations
13. Realization and Application of the Rules of Law
14. Legally Relevant Behavior. Offences
15. Legal Liability
16. Legal Language. Legal Techniques of Rule Creation
17. Theory of Legal Argumentation
18. Families of National Legal Systems.
19. National and International Legal Systems and Their Correlations



Sumy  
National  
Agrarian  
University

20. The Rule of Law

21. Rule of Law, Rule-of-law State and Welfare State under Conditions of Sustainable Development: Their Correlation

Hours per week / Credits  
2 SWS / 7 ECTS

Exam Assignment Consists of Two parts: 1) Passing Multiple Choice Test (30 questions) according to the learnt topics; 2) Written answer by solving the proposed practical situation.

## **International Criminal Law**

**Prof.Dr. Alona Klochko**  
**Sumy National Agrarian University (Ukraine)**  
**University of Neuchatel (Switzerland)**

### **Abstract**

The course "International Criminal Law" comprises selective topics aimed at forming students' key knowledge of the basics of international criminal law. The corresponding educational course directs the attention of students specifically to the notion and general principles of the international criminal law, responsibility for committing core international crimes, implementation of international criminal law jurisdiction, the results of the activities of international organizations with the purpose qualifications of international crimes, prevention committing international crimes. An emphasis is made on the use of comparative method. Main purpose of the course is to acquire by students of the system of knowledge of international criminal law; to make students able to interpret and apply the rules of international criminal law, focusing students' attention on complex theoretical and practical problems of combating international crimes. The course is offered in a 3 ECTS credits.

### **Course structure**

1. Notion and General Principles of the International Criminal Law
  - 1.1. What Is International Criminal Law?
  - 1.2. International Criminal Law/Comparative Criminal Law/Domestic Criminal Law.
  - 1.3. General Principles of International Criminal Law.
2. International Core Crimes
  - 2.1. The Social Danger of International Crimes.
  - 2.2. International Crimes in Domestic Legislation.
  - 2.3. Individual Criminal Responsibility (Art.25 of Rome Statute of International Criminal Court).
3. Separate Areas of International Cooperation in Combating International Crimes
  - 3.1. Sources of the International Criminal Law.
  - 3.2. International Cooperation in the Fight Against Criminality. Transnational Crimes.
  - 3.3. Unification of Criminal Legislation.
4. The Concept of Crime in International Criminal Law
  - 4.1. The evolution of the concept of a crime in international law
  - 4.2. Actus Reus
  - 4.3. Mens Rea
5. War Crimes and Crimes of Aggression
  - 5.1. War Crimes Under the Rome Statute.
  - 5.2. War Crimes Today and the Mechanisms for Prevention.
  - 5.3. Crimes of Aggression Under the Rome Statute.
6. Crimes against Humanity
  - 6.1. Definition of the Concept of Crimes Against Humanity in the Statutes and Judgments of Permanent And ad Hoc Tribunals
  - 6.2. Definition of the concept of crimes against humanity in Rome Statute.

### 6.3. International Legal Mechanisms and Countermeasures of Crimes Against Humanity.

#### 7. Genocide

7.1. Interpretation of the Definition of Genocide.

7.2. Genocide as a Crime Prohibited Under International Law.

7.3. Genocide Prevention.

Hours per week / Credits

4 SWS / 3 ECTS

#### Exam

A two-hour written examination on questions to be developed on the course theme. In the event of failure, the evaluation will be based on a written contribution of 10 to 15 pages (maximum) on a given topic (not subject to correction). Insufficient work constitutes a definite failure. Written examination for 3 credits

**History of State and Law of Ukraine and the Foreign Countries**

**Doctor of philosophy Svitlana Kaliuzhna**  
**Specialty 081 Law, associate professor of International Relations Chair**  
**Sumy National Agrarian University**

**Abstract**

Discipline "History of State and Law of Ukraine and the Foreign Countries" focuses on studying the process of formation, development and changes of structures, institutions and mechanisms of government from ancient period till now. This course focuses student's attention on development of the legal systems of Ukraine and the foreign legal systems, including certain codifications and legal acts.

**Aim:** Provide students with knowledge of the general history of state and law of Ukraine and the foreign countries, to highlight historical ways of formation and development of the political and legal structure of the leading countries of the world in different historical epochs; to show the role of economic, natural geographic, social, demographic, ideological, religious, ethnic and other factors in the emergence and development of state and law institutes in different regions of the world; to distinguish the common features and the differences in the development of the historical forms of state and legal structure of the different states and at different periods of time.

**Course structure**

1. History of State and Law of Ukraine
2. The crisis and the collapse of the USSR.
3. Formation of the legal basis of statehood of Ukraine (1991-1996).
4. State and Law of the Ancient East.
5. State and Law of the Ancient India and China.
6. State and Law of Ancient Greece.
7. State and Law of Ancient Rome.
8. The law of the Western Slavs.
9. Early feudal monarchies in Europe.
10. The formation of a bourgeois state in England.
11. The formation of the United States.
12. The formation of a bourgeois state in France.
13. Development of the state system of Germany.
14. Britain and its Empire. French Empire.
15. Features of the state system of the United States and Western Europe in the postwar period.

Hours per week / Credits  
4 SWS / 10 ECTS

**Exam**  
**Written examination**

## **Forestry and landscape gardening**

### **Use and maintenance of park facilities**

**Senior teacher, candidate of science Svitlana Trotska  
Sumy National Agrarian University**

#### **Abstract**

The discipline "Use and maintenance of park facilities" is an optional component of the educational and professional program in the specialty 206 Garden and park management. The subject of study of the discipline is measures for the creation, formation and maintenance of garden and park objects of various functional purposes. The main task of studying the discipline is to solve various legal, agrotechnical, aesthetic, organizational, operational and economic tasks aimed at the creation, formation and maintenance of garden and park objects of various functional purposes. The purpose of the educational discipline "Use and maintenance of park facilities" is for students to master the applied basics of creating favorable conditions for the growth and development of ornamental plants in the structure of plantings of garden and park landscape complexes, forest parks and green areas of settlements, meeting the population's need for recreation.

#### **Course structure**

1. Introduction. Content of the discipline. Clear definitions.
2. Basic rules for accepting and handing over garden and park objects into operation. Works on the preparation of garden and park objects for commissioning.
3. Rules for the maintenance of green spaces in populated areas of Ukraine.
4. Methods of diagnosing the viability of decorative plantings and assessing their condition.
5. Peculiarities of the formation of root systems of various tree species in the conditions of settlements.
6. Installation of drains, drainage, paths, decorative ponds.
7. Basic measures and features of care for various types of ornamental plantings.
8. Rules for the maintenance of structures and equipment at garden and park facilities.
9. Modern technologies for the care of lawns, decorative ponds and other objects.

Hours per course / credits –  
150 / 5 ECTS

Exam

**Intellectual property**

**Prof. Dr. Nataliya Stoyanets**  
**Sumy National Agrarian University**

**Abstract**

Intellectual activity and its results - objects of intellectual property acquire a decisive and of priority value. It is these factors that today determine the strategy and tactics of the socio-economic development of the state. Production and intellectual activity, to some extent, change places. In the first place is intellectual property, which becomes the determining and driving force of socio-economic progress. Human creative activity extends to any other species socio-economic activity.

**Course structure**

- Topic 1. The essence, and the basic concepts of intellectual property
- Topic 2. Evolution of intellectual property as a right.
- Topic 3. Management of the process of creating objects of intellectual property rights and organization of innovations
- Topic 4. Objects and subjects of intellectual property rights
- Topic 5. State system of protection of intellectual property
- Topic 6. Legal protection of objects of patent law
- Topic 7. Legal protection of objects of copyright and related rights
- Topic 8. Legal protection of means of individualization of participants in commodity circulation, their goods and services
- Topic 9. Foreign experience of the state system of legal protection of intellectual property
- Topic 10. Implementation of law and the economy of intellectual property
- Topic 11. International intellectual property law enforcement
- Topic 12. Commercialization of objects of intellectual property.
- Topic 13. Creating a portfolio of intellectual property
- Topic 14. Management of technology transfer
- Topic 15. Protection against unfair competition

Hours per week / Credits  
4 SWS / 5 ECTS

Exam  
Written examination



**Greenhouse economy**

**Prof. Dr. Nataliya Stoyanets**  
**Sumy national Agrarian University**

**Abstract**

Mastering the method of calculations for the organization of a greenhouse economy, which includes greenhouses (closed ground), open ground, auxiliary premises, and subdivisions, administrative buildings. Cultivation of high-quality flowering plants on an industrial basis using modern reproduction methods requires appropriate organization of the economy, use of the latest equipment and technologies.

**Course structure**

Topic 1: Requirements of flowering and ornamental plants to environmental conditions and methods of their regulation.

Topic 2: Classification, purpose and construction of closed ground structures.

Topic 3: Microclonal decomposition.

Topic 4: Technology of growing roses.

Topic 5: Technology of growing chrysanthemums. Chrysanthemum varieties and their characteristics.

Topic 6: Preparation of tulip bulbs for distillation.

Topic 7: Introduction to the peculiarities of growing cyclamen.

Topic 8: Technology of growing daffodils.

Topic 9: Technology of growing lilies.

Topic 10: Technology of growing hybrid hyperaster.

Topic 11: Technology of growing calla.

Topic 12: Technology of growing carnations.

Topic 13: Technology of growing gerberas.

Topic 14: Study of technology for growing begonias.

Topic 15: Technology of growing geraniums.

Hours per week / Credits

4 SWS / 5 ECTS

Exam

Written examination

**Forestry**

**Prof. Dr. Nataliya Stoyanets**  
**Sumy National Agrarian University**

**Abstract**

Is the study of the specifics of forestry management, the peculiarities of the application of various categories, systems, methods and types of felling in order to increase the efficiency of the use of forest resources and increase the productivity and quality of the forests of Ukraine. The main tasks are the cultivation (nurturing) of highly productive and biologically stable forest stands, restoration and formation of native stands, increasing the productivity of forests, using and increasing the ecological and social role of the forest, developing systems and methods of forest felling, improving forest felling technologies.

**Course structure**

Topic 1. Basics of forest park design.

Topic 2. Design and estimate documentation for the design of forest parks.

Topic 3. Graphic material. (The structure of the technical project of the forest park. Working drawings for the project of the forest park object. Text documentation for the forest park project. Explanatory note to the project of the forest park object. The structure of the technical project of the forest park of Sumy. Execution of necessary records, drawings and explanations).

Topic 4. The main ways to create forest park landscapes.

Topic 5. Features of landscape reconstruction of forest parks.

Topic 6. Needs of landscape reconstruction in forest parks.

Topic 7. Maintenance of forest park landscapes.

Topic 8. Organization of protection of forest park complexes.

Topic 9. Monitoring as a basis for effective landscape management.

Topic 10. The main tasks of agroforestry reclamation monitoring, its role and importance in the formation and sustainable use of optimized forest agro-landscapes.

Hours per week / Credits

4 SWS / 5 ECTS

Exam

Written examination

## **DENDRODESIGN**

**Prof. Dr. Tetiana Melnyk**  
**Sumy National Agrarian University**

### **Abstract**

The purpose of studying the discipline "Dendrodesign" is to summarize information about the biological and decorative features of native and introduced dendroflora, their relationship to environmental factors, and to develop a student's creative approach to landscape design of green areas on different objects. Special attention is given to the study of tree plants and their relationship to the external environment, natural decorative properties of trees and shrubs, basic compositional elements of green areas and their formation, principles of selection and combination of tree plants in creating compositions, topiary art, inventory techniques of plantings, and dendrodesign. The depth and volume of knowledge obtained from this discipline help students better assimilate other related disciplines, based on the dialectical unity of the environment and the plant organism.

### **Course structure**

1. Modern requirements and trends in dendrodesign as a component of green construction.
2. Main principles of selection and combination of woody plants.
3. Basics of Compositional and Landscape Design for Green Plantings
4. The types of garden-park landscapes.
5. Features of growth in woody plants. Longevity of trees and shrubs.

Hours per week / Credits

4 SWS / 5 ECTS

Exam

Written examination

**Varietal resources and their formation**

**A/ Prof., PhD Nataliya Kandyba  
Sumy National Agrarian University**

**Abstract**

This course provides students with theoretical and practical knowledge of the varietal diversity of the main forest and landscape ornamental crops and the peculiarities of their use. The goal is the practical implementation of theoretical provisions in forestry and landscape gardening, the use of forest and ornamental crops in different resource and economic and natural and climatic zones depending on their intended purpose, taking into account the peculiarities of their cultivation.

The course includes:

- Familiarisation with the main representatives and knowledge of modern technologies for growing ornamental trees, shrubs and flower crops
- Understanding and preparation of work plans and research programmes for ornamental crops
- Analyse the state and dynamics of quality indicators of forestry and landscape gardening facilities when creating cultural landscapes
- Systematisation of scientific and technical information on research topics
- Develop projects using ornamental plants

**Course structure**

1. Ornamental plants in the historical aspect
2. Modern principles of classification of ornamental plants
3. The main representatives of coniferous ornamental plants
4. The main representatives of deciduous ornamental plants
5. The main representatives of climbing or support-attached deciduous woody ornamental plants
6. The main representatives of ornamental annual and biennial herbaceous plants
7. The main representatives of herbaceous perennial ornamental plants
8. The main representatives of decorative interior gardening

Hours per week/Credits  
4 SWS / 5 ECTS

Exam  
Written examination

## **Management and marketing of green economy**

**PhD of Economics, Associate Professor Victoriia Tkachenko**  
**Sumy National Agrarian University**

### **Abstract**

This course contributes to students' formation of modern management thinking and a system of special knowledge in the fields of management and marketing, formation of a system of knowledge about the essence and content of marketing as a philosophy of business activity in the conditions of a market economy and competition; forming an understanding of the conceptual foundations of system management of organizations; acquiring the skills to analyze the internal and external environment, making adequate managerial decisions.

### **Course structure**

1. Concept, essence, principles and types of management.
2. Functions and methods of management.
3. Manager in the organization.
4. Information and communications in management.
5. Management and leadership.
6. Development and adoption of management decisions.
7. Social responsibility and ethics in management.
8. The essence of marketing and its modern concept.
9. Marketing research.
10. Marketing policy of communications.

Hours per week / Credits

4 SWS / 5 ECTS

Exam

Written exam

**LAWN**

**Prof. Dr. Andrii Melnyk**  
**Sumy National Agrarian University**

**Abstract**

The subject "Lawn" is aimed at acquiring theoretical knowledge in the field of turf science, which encompasses a combination of knowledge from cultural phytocenology and landscape science, developed on the basis of botany, soil science, agrochemistry, general and applied agriculture, turfgrass management, genetics, plant introduction, and plant breeding, in conjunction with the technology of installation and maintenance of lawns and its relationship with landscape architecture.

The discipline "Lawn" is a mandatory subject that covers the theoretical and practical foundations of creating and maintaining lawns of various purposes, taking into account the current achievements of national and global science, and developing practical skills in their establishment, selection of turfgrass species and varieties, seeding rates, care, and lawn repair.

**Course structure**

1. History of Lawns. Concept of a Lawn. Classification of Lawns. Requirements for the Decorativeness of Turf and Evaluation of the Overall Decorativeness of Lawns.
2. Taxonomic, biomorphological, and ecological characteristics of lawn grass species
3. Rewrite the text about lawn weeds and ways to control them.
4. Diseases and pests of lawns. Methods of controlling diseases and pests, methods and timing of plant protection products.

**Hours per week / Credits**  
**4 SWS / 5 ECTS**

**Exam**  
**Written examination**

**CYTOLOGY, HISTOLOGY, EMBRIOLOGY**

**Ph.d. Oleksandr Panasenko**  
**SNAU, Sumy**

**Abstract**

This course about the structural organization of the animal body at the cellular, tissue and organ levels in the norm, namely the structure of the cell, its organelles, their functions; structure and development of germ cells, the main stages of embryogenesis, the structure of the placenta; structure of different types of body tissues; structure of various organs and systems of the animal organism. The doctrine of tissues. The concept of fabrics. The origin of tissues. Tissue classification. Source of development, classification of tissues. Nervous system, its role in the life of the organism. Ontogenesis of the nervous system. Morphological and functional division of the nervous system. Hematopoietic organs and immune defense. General characteristics of central and peripheral hematopoietic organs. Digestive organs. General morphofunctional characteristics of the digestive system. Respiratory organs. Development, histological structure of airways. Study of the structure of the tracheal wall and lungs of mammals. Study of the structure of the respiratory organs of birds. Study of the structure of the testis, epidermis and prostate. Study of the structure of the ovary and uterus. Study of the structure of the genitals of birds.

**Course structure**

1. Fundamentals of cytology.
2. General embryology.
3. Epithelial tissues.,
4. Connective tissues.,
5. Muscular tissues.
6. Nervous tissues.
7. Cardiovascular systems.
8. Nervous organs.
9. Hematopoietic organs.
10. Endocrine system.
11. Digestive system,
12. Respiratory system
13. Genitourinary system.

Hours per week/Credits  
5 SWS / 5 ECTS

**Exam**

Written examination for 5 ECTS

**VETERINARY PATHOLOGY**

**Prof. Dr. Kalashnik Oleksandr,  
Sumy National Agrarian University**

**Abstract**

This course is a professional bridge course for undergraduates majoring in veterinary medicine. Its main task is to discuss the changes of function, metabolism and morphological structure of disease of livestock and poultry, as well as their causes and mechanisms, so that students can understand the nature of diseases, the general principle of disease occurrence, development and outcome, and master the body's mechanism when livestock and poultry are sick. The law of function, metabolism and morphological structure changes, learn animal autopsy techniques, lesions inspection and description methods, and can make preliminary pathological diagnosis. Through the study of this course, the theoretical foundation will be laid for students to further learn professional courses.

**Course structure**

- I. BACKGROUND I. Local blood circulation disorder
- II. 1. Edema, dehydration, and acid-base balance disorders
- II.2 Research and development process of tissue cell injury and microscope
- II.3 Adapt and Repair
- II.4 Inflammation, prevention and control of inflammation and medical ethics. Fever.
- II.5 Progress and cases of tumor and anti-tumor
- II.6 Cardiovascular Pathology
- II.7 Hematopoietic system pathology
- II.8. Pathology of the urinary system
- II.9. Nervous system pathology
- II.10 Pathology of infectious diseases, scientific prevention

Hours per week / Credits  
4 SWS / 5 ECTS

Exam  
Written examination



**ETHOLOGY AND ANIMAL WELFARE**

**Prof. Dr. Ulko Larisa**  
**Sumy National Agrarian University**

**Abstract**

Ethology and animal welfare are the science of animal behavior, their life manifestations, the influence of the nervous system, hereditary factors, conditions of keeping, feeding, exploitation, environmental changes, anthropogenic factors on them. Special ethology studies the life manifestations of various species, sex-age and technological groups of animals, their

adaptation, acclimatization, social behavior in the herd depending on the technology of livestock production.

The main task of ethology is to provide a phylogenetic and physiological explanation of the functional interrelationships between the factors that shape the behavior of living beings and influence it. Having studied the discipline «Ethology and animal welfare», the student must know the characteristics of animal behavior depending on the conditions of keeping, feeding, exploitation, be able to use knowledge of behavioral reactions of animals in practice for the purpose of rational use of genetic resources of agricultural animals, production of high-quality and environmentally safe products. The discipline forms students' logical thinking, promotes understanding of the physiological manifestations of animals and the influence of cultivation and production technologies on them.

**Course structure**

1. Ethology: normal behavior and its violation
2. Prosperity (welfare) of animals: the definition of welfare as a science, its task
3. Welfare of cattle
4. The welfare of horses
5. Welfare of sheep and goats
6. Welfare of pigs
7. The welfare of birds
8. Well-being of dogs and cats
9. Welfare of wild, exotic and laboratory animals
10. Animal welfare at slaughter
11. Animal welfare during transportation

Hours per week / Credits

4 SWS / 5 ECTS

Exam

Written examination

**BIOETHICS, BIOSAFETY, BIOPROTECTION AND ECOLOGY**

**Prof. Dr Hanna Fotina**  
**Sumy National Agrarian University**

**Abstract**

The aim of curriculum "Bioethics, biosafety, bioprotection and ecology" is to learn the basic discipline provisions arising in the process of employment and consists in the acquisition by students of theoretical and practical knowledge of the basics of biosafety, bioethics and veterinary ecology, in accordance with the requirements of the OIE, national and international legislation, from the standpoint of the concepts of "One Health".

**Course structure**

- 1 Introduction to Biosafety, Bioethics, and Veterinary Ecology
- 2 Bioethics
- 3 Environmental Impact and Sustainability
  - 3.1. Veterinary Measures for Sustainable Livestock Production
  - 3.2. Toxins in Food
- 4 Human Intervention and Environmental Ethics
  - 4.1. Human Impact on Natural Processes
  - 4.2. Ecosystems and Biogeocoenosis
- 5 Ethical Decision-Making
  - 5.1. Understanding Moral Issues
  - 5.2. Applying Ethical Knowledge
- 6 Practical Application of Knowledge
  - 6.1. Application of Biosafety Principles
  - 6.2. Problem-Solving and Ethical Decision-Making

Hours per week / Credits  
3 SWS / 5 ECTS

Exam  
Written exam

## **VETERINARY HYGIENE AND ANIMAL HUSBANDRY SANITATION**

**Prof. Dr. Nahorna Liudmyla**  
**Sumy National Agrarian University**

### **Abstract**

This course provides a study of environmental parameters and microclimate of livestock facilities, analysis and prevention of animal diseases, including those caused by non-compliance with sanitary and hygienic standards of keeping, care and feeding, hygienic standards and rules of keeping, feeding, watering, care and cultivation of various types of productive farm animals, methods of research of objects of environment.

The goal is to form in applicants an understanding of the theoretical and practical basis of the impact of normal and deviant environmental factors on the body of animals, hygienic standards and rules of keeping, feeding, watering, care and breeding of different age groups of productive farm animals, methods of research of environmental objects, ways improving them, maintaining health and increasing productivity to obtain quality and safe livestock products.

### **Course structure**

- I. Sanitary and hygienic requirements and assessment of the air environment.
  - I.1 Hygienic value of physical properties of air
  - I.2 Hygienic value of gas composition of air
- II. Sanitary-hygienic state of soil, water, forage, livestock buildings
  - II.1 The sanitary-hygienic value of soils.
  - II.2 Hygienic requirements for water.
  - II.2 Sanitary and hygienic requirements for planning livestock buildings.
- III. Special hygiene.
  - III.1 Hygiene of cattle and pigs. Hygiene of keeping sheep, horses, poultry and fur animals
  - III.2 Hygiene of pond fish farming.
  - III.3 Hygiene in beekeeping.

Hours per week / Credits  
4 SWS / 5 ECTS

Exam  
Written examination

**PRODUCTION, SAFETY AND HYGIENE OF FODDER AND FEED ADDITIVES**

**Prof. Dr. Hanna Fotina**  
**Sumy National Agrarian University**

**Abstract**

The aim of curriculum “Production, safety and hygiene of fodder and feed additives” involves students mastering modern methods of assessing the safety of feed and feed additives based on physical, chemical and biological indicators.

**Course structure**

- 1 Introduction to Veterinary and Sanitary Control
  - 1.1. Theoretical Foundations
  - 1.2. Regulatory Framework
- 2 Principles of Sanitary Control
  - 2.1. Principles and Organization
- 3 Quality Assessment of Feed and Feed Additives
  - 3.1. Laboratory Testing
  - 3.2. Economic Evaluation
- 4 Risk Analysis and Safety
  - 4.1. Risk Assessment
  - 4.2. Hazard Analysis
- 5 Veterinary and Sanitary Control Practices
  - 5.1. Implementation of Control
  - 5.2. Feed Quality Control

Hours per week / Credits  
3 SWS / 5 ECTS

Exam  
Written exam

## **VETERINARY INTERNATIONAL AND NATIONAL LEGISLATION**

**PhD Sergii Kasianenko**  
**Sumy National Agrarian University**

### **Abstract**

This course provides students with knowledge of the basics of veterinary legislation and international law and provides additional in-depth knowledge on the regulation of public relations in the field of Veterinary. The purpose of the course is to form students' ability to dynamically combine knowledge, skills, communication skills, solve complex problems during professional activity on the basis of application the field of veterinary medicine.

### **Course structure**

1. State administration system and organization of activities in the field of veterinary medicine
2. General characteristics of veterinary law
3. Legislation on state control and supervision
4. Legal regulation of animal welfare and health protection
5. National and international legislation in the field of safety and quality of food products, animal by-products and feed
6. Legal responsibility in the field of professional activity

Hours per week / Credits  
4 SWS / 5 ECTS

Exam  
Written exam

**VETERINARY AND SANITARY INSPECTION OF LIVESTOCK PRODUCTS,  
HYDROBIONTS, HONEY AND PLANT PRODUCTS**

**Prof. Dr. Tetyana Fotina**  
**Sumy National Agrarian University**

**Abstract**

The aim of curriculum "Veterinary and sanitary inspection of livestock products, hydrobionts, honey and plant products" training students of higher education in the application of organoleptic, laboratory and special methods of safety and quality research of products of animal origin, and in food markets - of plant origin for their veterinary and sanitary evaluation, as well as the application of sanitary and hygienic measures at all stages of production, storage, transportation and implementation. Task: to acquire theoretical knowledge and practical skills regarding research methods for the safety and quality of food products and feed, further processing or other use, analysis of production technology and technological equipment, which must be followed by the manufacturer and supplier to ensure product safety.

**Course structure**

Module 1: Import Control and Certification

1.1. Understanding Import Control

1.2. Methods and Techniques

Module 2: Food and Feed Safety Principles

2.1. General Principles

Module 3: State Auditing and Monitoring

3.1. State Audit Procedures

3.2. Food Safety Management

Module 4: Practical Application

4.1. Practical Scenarios

4.2. Audit Execution

Hours per week / Credits

4 SWS / 5 ECTS

Exam

Written exam

## **SYSTEM OF ANALYSIS OF DANGEROUS FACTORS AND CONTROL AT CRITICAL POINTS (HACCP)**

**Prof. Dr. Tetyana Fotina**  
**Sumy National Agrarian University**

### **Abstract**

This course provides a study of the methodological principles and methodological techniques of product quality and safety management, to study the models and methods of organization management based on international requirements for management systems, to form students' understanding of the essence of the quality management mechanism using classic management tools and modern requirements of international standards, as well as requirements European and national legislation to the activities of food market operators to ensure the safety of food products, development and implementation of prerequisite programs and procedures based on the principles of HACCP.

### **Course structure**

- I. Introduction to HACCP and Its Significance
  - A. Definition and Concept of HACCP
  - B. Role of HACCP in Food Production and Quality Management Systems
  - C. Historical Perspective of HACCP in Food Safety
- II. Basic Conditions for HACCP Implementation
  - A. Prerequisites for Implementing HACCP
  - B. Understanding the Seven Principles of HACCP
- III. The Food Industry's Perspective on HACCP
- IV. Differentiating CP, CCP, PRP, and OPRP
- V. Practical Application of HACCP
- VI. Case Studies and Exercises

Hours per week / Credits  
3 SWS / 5 ECTS

Exam  
Written exam

**FORENSIC VETERINARY EXAMINATION**

**Associate Prof., Liudmyla Ivanovska**  
**Sumy National Agrarian University**

**Abstract**

Study of the main methods of determining osteometric parameters, species features of the structure of internal organs and organoleptic parameters by laboratory tests for species identification of animals and products obtained from them; mastering the morphological structure of muscles and their changes depending on the influence of various factors, mastering the basics of differential pathological diagnosis of animal diseases of various etiologies and their use in forensic veterinary practice, mastering the stages of forensic veterinary examination for trauma, poisoning and toxicosis, technological disorders, assessment of professional actions of the veterinary doctor.

**Course structure:**

- 1: Foundations of Forensic Veterinary Examination
  - 1.1: Introduction to Forensic Veterinary Science
  - 1.2: Animal Identification Techniques
- 2: Forensic Veterinary Examination in Different Settings
  - 2.1: Industrial Animal Examination
  - 2.2: Animal Welfare Assessment
- 3: Forensic Evidence Collection and Analysis
  - 3.1: Handling Physical Evidence
  - 3.2: Biological Lens Examination
- 4: Veterinary Pathology and Toxicology
  - 4.1: Pathological Examination
  - 4.2: Toxicological Examination
- 5: Forensic Veterinary Traumatology
  - 5.1: Trauma Assessment

Hours per week / Credits

5 SWS / 5 ECTS

**Exam**

Written examination



## **VETERINARY BUSINESS AND ENTREPRENEURSHIP**

**As. Prof. Valentyna Nechyporenko**  
**Sumy National Agrarian University**

### **Abstract**

The development of the discipline is possible for the health of the highest education to be established as a practical way to create a veterinary business, as a factor in the understanding of its effectiveness, as a source of priming for enterprises, as a result of the priming of business ideas.

Purpose of the discipline is the provision of students with knowledge of the basics of business and enterprise activity in the field of veterinary medicine, the development of tools for the adoption of effective economic decisions with an eye on modern economic realities and Ukrainian legislation.

### **Course structure**

1. Legal basis of meterinary entrepreneurship
  - 1.1 Main features of business and types of entrepreneurial activity in veterinary medicine
  - 1.2 Subjects and objects of entrepreneurial activity and conditions of their management.
2. Procedure for state registration of a veterinarian-entrepreneur (individual) and a veterinary medicine institution (legal entity)
  - 2.1. Conditions of state registration of a veterinarian-entrepreneur: an individual entrepreneur, a legal entity entrepreneur.
  - 2.2. Algorithm for creating a private case for individuals and legal entities.
3. Risks of veterinary entrepreneurship.
  - 3.1. Classification of risks and sources of their occurrence.
  - 3.2. Ways and methods of risk prevention and mitigation.

Hours per week / Credits  
4 SWS / 5 ECTS

Exam  
Written examination

## **MARKETING MANAGEMENT IN VETERINARY MEDICINE**

**As. Prof. Valentyna Nechyporenko**

**Sumy National Agrarian University**

### **Abstract**

This course provides students with mastering the methodology and techniques for assessing the forms of manifestation of objective economic laws of the market in a specific epizootic situation and in specific conditions of production, the use of veterinary products, the provision of paid professional services, as well as the use of the data obtained in the activities of the manager of a veterinary institution.

The purpose of studying this course is to form future specialists in modern managerial thinking and a system of special knowledge in the field of economics, management and marketing, understanding the conceptual foundations of system management of veterinary medicine organizations, making adequate management decisions.

### **Course structure**

#### **1. The process of marketing management in veterinary medicine**

1.1 Definition of the process of marketing management in veterinary medicine and its main stages. 1.2. Marketing management from the standpoint of managing activities, functions, demand in veterinary medicine institutions

#### **2. Components of marketing activity of veterinary medicine institutions**

##### **2.1. Model of marketing activity of veterinary enterprise**

2.2. Functional support of marketing activities of veterinary medicine institutions (strategy, tactics, marketing services, marketing control, marketing information systems).

#### **3. Marketing planning and control in veterinary medicine institutions**

3.1. Main Aspects of Strategic Analysis in Veterinary Medicine Institutions and Their Characteristics 3.2. Development of budget and planning of expenditures of specific operational and tactical marketing programs in veterinary medicine 3.3. System and Process of Control of Marketing Activities in Veterinary Medicine

Hours per week / Credits

3 SWS / 5 ECTS

Passed

## **Innovative technologies in enterprises of the industry**

**Ass. Prof. Oksana Melnyk**  
**Sumy National Agrarian University-Sumy**

### **Abstract**

The purpose of studying the discipline is the expansion and deepening of students knowledge of the current state and prospects of the development of nutrition, scientific substantiation of the use of innovative methods of processing raw materials, mastering of theoretical and practical skills of students and their implementation during the design of the latest food products of functional purpose; the ability to diagnose the technologies of culinary production as integral technological systems aimed at improving existing and developing more effective innovative technologies; the ability to determine the peculiarities and dynamics of the transformation of the formats of restaurants in accordance with changes in the restaurant business.

### **Course structure**

1. Introduction.
2. Breakthrough technologies in the food industry.
3. Innovative formats of modern restaurant establishments and their development.
4. Modern Foundations of Nutrigenomics.
5. Modern aspects of nutrition and scientific-practical and methodological approaches to the design of food products of functional purpose.
6. Innovative food ingredients.
7. Innovative technologies and quality of functional food products.

Hours per week / Credits

4 SWS / 5 ECTS

Exam

Written examination

## **Low-temperature and extrusion technologies**

**Ass. Prof. Oksana Melnyk**  
**Sumy National Agrarian University-Sumy**

### **Abstract**

The purpose of studying the discipline "Low-temperature and extrusion technologies" is for the student to gain knowledge about the essence of low-temperature and extrusion technologies, the flow of processes in these technologies, the requirements for raw materials and food additives used for their production. high-quality products, parameters of technological processes, equipment, packaging materials.

The course is designed to acquaint students with the basic laws of low-temperature and extrusion technologies: laying the foundation of knowledge in the field of technologies for the production of food products from raw materials of animal and plant origin and their storage, ensuring the main quality indicators.

### **Course structure**

1. Basics of low-temperature technologies. Requirements for raw materials used in the technology of freezing semi-finished products.
2. Modern low-temperature technologies implemented in the bakery industry.
3. Modern low-temperature technologies used in the confectionery industry.
4. Modern low-temperature technologies for processing and long-term storage of fruits and vegetables.
5. Extrusion is a modern way of obtaining breakfast cereals. Types of extruders.
6. Changes in the main components of grain raw materials during the extrusion process.
7. Production of extruded products and influence of variable extrusion parameters on the main indicators of finished products.

Hours per week / Credits  
4 SWS / 5 ECTS

Exam  
Written examination

## **Research Work**

**Doctor of Philosophy, Associate Prof. SNAU  
Olena KOSHEL**

### **Abstract**

The purpose of the course: acquaintance with the principles of organization of scientific activity of students; formation of knowledge about the main directions of scientific research and their essence; study of the categorical apparatus and classification of basic methods; determination of methods and methodology of scientific research; acquaintance with the types of scientific works required by a specialist of the highest qualification in the field of restaurant business, as well as the possibilities of implementing the results of scientific and research works and prospects for their development.

Tasks of the course: training of future specialists in food technology on:

- formation of a scientific hypothesis and technological concept of scientific development;
- scientific substantiation of the recipe and technology of scientific development;
- testing of recipes and technology of scientific development in the laboratory and the principles of expanding the range of relevant groups of food products;
- comprehensive assessment of the quality of scientific development;
- development and approval of regulatory documentation (project);
- conditions for the introduction of scientific development into production.

The course is offered in a 5 ECTS version, In 3th Semesters. You will receive more detailed information inside the course.

### **Course structure**

#### **Module 1**

Topic 1. Functional characteristics of food ingredients of different nature, type, technological state, product form.

Topic 2. Technological characteristics of food ingredients of different nature, type, technological condition, product form.

Topic 3. Formation of quality of semi-finished and finished products.

#### **Module 2**

Topic 4. Scientific basis for the development of science-intensive technologies.

Topic 5. Development of resource-saving technologies for food production.

Topic 6. Scientific substantiation of special purpose food products.

Hours per week / Credits

2 SWS / 5 ECT

### **Exam**

Written examination for 5 ECTS

**Fundamentals of bioplastics technologies**

**Senior Lecturer Dmytro Bidiuk**  
**Senior Lecturer Serhii Bokovets**  
**Sumy National Agrarian University-Sumy**

**Abstract**

The purpose of studying the discipline is to acquire, systematize and consolidate theoretical knowledge about the global market of bioplastics as the basis of modern packaging materials, their types and production technologies, processing methods, commercial application and mechanisms of biological decomposition, training of qualified specialists capable of contributing to the development of a sustainable and environmentally responsible food industry by using bioplastics.

As part of this educational component, the student will be introduced to the types of bioplastics, world and domestic leaders in their production. Within the framework of the discipline, the acquisition of skills for obtaining existing bioplastics, as well as the development of new ones, their use as food packaging, disposal through biological decomposition, as well as the establishment of regularities of the influence of various factors on the specified stages of their life cycle are provided.

**Course structure**

1. Bioplastics. Current trends and development prospects.
2. Types of biodegradable polymers as the basis of bioplastics.
3. Types of bioplastics and technologies for their production.
4. Methods of processing bioplastics.
5. Commercial use of bioplastics.
6. Decomposition mechanisms of commercially available and promising types of bioplastics.
7. The latest technologies of bioplastics.

Hours per week / Credits  
4 SWS / 5 ECTS

Exam  
Written examination

## **Innovative engineering**

**Ass. Prof. Marina Savchenko-Pererva**  
**Sumy National Agrarian University-Sumy**

### **Abstract**

The discipline "Innovative engineering" provides generalized information sources for building effective technological processes at processing and food enterprises. During studying the discipline, students consider the possibilities of improving the technological processes of food production, effective use of resources - project, technological, financial, personnel.

The goal of teaching the discipline "Innovative Engineering" is to acquire, systematize and consolidate students' theoretical knowledge and practical skills in building an effective technological process by adopting innovative engineering solutions and evaluating the proposed solutions.

The program of the discipline envisages the formation of a scientific and engineering approach to the issues of the relationship between the development of technology, the design of enterprises and roads increasing the efficiency of the functioning of food enterprises as a whole, based on the principles of resource optimization; acquisition of professional knowledge, skills and abilities in areas of creation and substantiation of technologies that contribute to increasing food and biological value, economic efficiency.

### **Course structure**

1. The concept of innovative engineering. The main activities and directions of Innovation Engineering.
2. Innovation engineering.
3. Concept of innovative project.
4. Innovative activities of enterprises.
5. Food industry innovations.
6. Organization of laboratory work. Safety equipment. Types of laboratory equipment.
7. World and domestic innovations.

Hours per week / Credits  
4 SWS / 5 ECTS

Exam  
Written examination

**Energy management and energy audit of processing and food enterprises**

**Ass. Prof. Marina Savchenko-Pererva**  
**Sumy National Agrarian University-Sumy**

**Abstract**

The discipline forms the volume of theoretical and practical knowledge and skills necessary in the professional activity of future highly qualified specialists in the field of energy management, energy saving and energy audit in the food industry.

During the introduction to the discipline, students will master methods of assessment, analysis and planning in energy use, development of energy-saving measures at the enterprise, drawing up and development of energy-saving programs that take into account technical, economic, financial and administrative factors. Students will familiarize themselves with the problems of choosing and justifying a more rational type of energy carriers, investing and financing in energy saving, the energy load of the enterprise, issues of information support for energy management.

**Course structure**

1. Concept of energy management. Energy conservation and energy audit.
2. Energy management. Accounting for energy consumption.
3. Conducting an energy audit. Assessment of energy saving potential.
4. The use of secondary energy resources and alternative and renewable energy sources as a way to save energy and increase energy efficiency of enterprises.
5. Thermal balance of food industry enterprises.
6. Methodology of thermal calculation of technological heat-consuming equipment of the food industry.
7. Algorithm for calculating energy consumption by energy audit objects of processing enterprises.

Hours per week / Credits  
3 SWS / 5 ECTS

Exam  
Written examination



**Innovative food ingredients**

**PhD, Assoc. Prof. Tetiana Stepanova**  
**Sumy National Agrarian University-Sumy**

**Abstract**

The purpose of studying the discipline "Innovative food ingredients" provides the knowledge of food ingredients and their use in the design of innovative foods. Attention is emphasized on the main types of modern food raw materials in order to effectively introduce it in the creation of innovative food

The course provides: deepening students' knowledge of current issues of modern food science; systematization of the received theoretical knowledge on discipline; development of skills of independent critical processing of sources of the scientific information; formation of research skills of students; stimulating students to independent scientific research, developing the ability to analyze best practices and summarize their own observations; acquisition of skills of practical realization of results of research of the chosen problem in independently executed developments.

**Course structure**

1. Ingredient components of food products
2. Functional food ingredients
3. Technological food additives
4. Physiological ingredients of natural origin
5. Use of food ingredients

Hours per week / Credits  
4 SWS / 5 ECTS

Final test  
Computer testing

## **Food Quality Management**

**PhD, Assoc. Prof. Tetiana Stepanova**  
**Sumy National Agrarian University-Sumy**

### **Abstract**

The course "Food Quality Management" is obtaining knowledge s about harmful substances that may be in food products and abilities to apply measures to reduce the harmful effects of hazardous substances in food products on the human body.

The course provides training of future specialists who clearly understand the problem of food safety, the criteria for hygienic assessment of food production and are guided by modern food safety systems

### **Course structure**

1. Introduction. Regulatory basis of quality and safety of food products.
2. Factors of food quality.
3. Food contamination and prevention.
4. Quality of restaurant products.
5. Methods and indicators of product's quality assessment.
6. Organization of quality control.
7. HACCP Quality Control System

Hours per week / Credits  
4 SWS / 5 ECTS

Exam  
Writing exam

### **Modern advances of food science**

**PhD, Assoc. Prof. Tetiana Stepanova**  
**Sumy National Agrarian University-Sumy**

#### **Abstract**

The purpose of studying the discipline "Modern advances of food science" is deepening knowledge about the current state and prospects of the nutrition development, scientific substantiation of use the innovative methods of processing raw materials, acquisition of theoretical and practical skills by students and their implementation during the design of the newest functional recognition products.

The course includes sections on the current state and prospects for the development of food science in terms of the unique assets of domestic and foreign scientists.

#### **Course structure**

1. Current state and prospects of food science in Ukraine and abroad
2. Technology of functional food products
3. New methods of processing raw materials
4. Features of new technologies for the preparation of culinary products
5. Peculiarities of the use of food ingredients in domestic and foreign food technologies

Hours per week / Credits  
4 SWS / 5 ECTS

Final test  
Computer testing

**Information technologies and optimization of technical and technological objects of the industry**

**Associate Prof. Ph.D. Anna Helikh**  
**Sumy national agrarian university**

**Abstract**

This course offers an acquiring the ability to optimally select the equipment and modes of its operation (time, temperature, pressure, etc.); methods and regimes of heat treatment, recipe composition, to model costs for the production of products that require sufficiently accurate calculation methods and, thus, the use of modern means of computer technology. Furthermore, students studying the principles of building mathematical models of food technology as objects of design, management and optimization. Verification of the reliability and validity of computer models of the course of technological processes, among which two types can be distinguished: physicochemical (deterministic) models and empirical models based on the processing of experimental data.

The course is offered in a 5 ECTS version.

**Course structure**

**I. BACKGROUND**

1.1 Content, purpose and main objectives of the discipline. General information about modeling. General concepts of process optimization.

1.2 The main objectives of the course, its relationship with the disciplines of special training.

1.3 Statement of modeling problems.

1.4 Software functions of the desktop environment MS Office, Excel, Math CAD and STATISTICA used to solve practical problems of modeling food technology.

II. Application in engineering practice of mathematical models and software functions of the working environment MS Office, Excel, Math CAD, STATISTICA- as modern methods of solving optimization problems and their graphical interpretation for presentation and visual understanding.

III. General notes information about the theoretical prediction experiment.

3.1 Basic concepts and definitions of experimental factors.

3.2 Checking the reproducibility of experiments. Calculation of experiment error.

IV. Mathematical description and planning of the experiment.

4.1 Mathematical description

4.2 Planning an extreme experiment

V. Basics of working with a complete factorial experiment.

5.1 Complete factorial experiment

5.2. The principle of compiling the regression equation

Hours per week / Credits

2 SWS / 5 ECTS

**Exam**

Test examination for 5 ECTS

### **Special food technology**

**Associate Prof. Ph.D. Anna Helikh**  
**Sumy national agrarian university**

#### **Abstract**

This course offers an acquiring the ability to is the expansion and deepening of knowledge of the current state and prospects for the development of nutritionology, the skills of analyzing scientific sources of information, the scientific justification of the use of food additives, the application of methodology and methods of conducting scientific research, the formulation of theoretical and scientific-practical approaches to the design of functional food products. Furthermore, students studying the principles of study of factors, processes of regularities that affect the quality of manufactured products and the effect of functional ingredients on the human body.

The course is offered in a 5 ECTS version.

#### **Course structure**

1. Scientific-practical and methodological approaches to the design of special food products
2. Food raw materials and dietary supplements as the basis of special food products
3. The latest technologies of food products
  - 3.1 Culinary products from fish
  - 3.2 Culinary products from meat and meat products
  - 3.3 Vegetable dishes. Iodine-containing pastes
  - 3.4 Dishes and side dishes from ECO leguminous products
  - 3.5 Flour culinary products
  - 3.6 Sour-milk cheese dishes
  - 3.7 Bakery and flour confectionery products
  - 3.8 Confectionery decorative semi-finished products
  - 3.9 Dessert dishes and sauces
  - 3.10 Sauces with dietary supplements
4. Quality of special food products
5. The latest technologies of food products for the population

Hours per week / Credits

2 SWS / 5 ECTS

Differentiated assessment

Test examination for 5 ECTS

## **Biotechnology**

**Prof. Dr. Olha Bordunova**  
**Sumy National Agrarian University**

### **Abstract**

The Biotechnology discipline contributes to the training of specialists capable of solving practical problems of professional activity in the field of livestock production using theories and methods of improving existing or breeding new populations of agricultural animals using biotechnological methods. The main topics to be studied: the subject and methods of biotechnology; gene cloning; obtaining genetically modified organisms; cell engineering; biotechnology of interferon and hormone production; biotechnology of biogas production; production and use of animal and poultry mouth stimulants. As a result of studying the educational component, the student will be able to characterize biological phenomena, create aseptic conditions for conducting biotechnological research; select a nutrient medium for clonal growth and cultivation; conduct a blood test, determine the Rh factor of the blood; use hormonal drugs to increase the growth and productivity of animals; to use knowledge of biotechnology when studying issues of breeding and selection of animals, breeding, special zootechnics and their future specialty by profession.

### **Course structure**

1. Theoretical foundations of biotechnology in animal husbandry.
2. Genetic engineering in animal husbandry.
3. Genetic engineering in animal husbandry.
4. Special biotechnology.

Hours per week / Credits

4 SWS / 5 ECTS

Exam

Written examination

**Modern methods of assessing the quality of livestock product**

**PhD Kyselov Oleksandr,  
Sumy National Agrarian University**

**Abstract**

The purpose of the course: is formation of knowledge and mastering of methods of assessing the quality of milk, meat and other products of animal origin in order to prevent human diseases from anthroozoonoses and other diseases transmitted through livestock products.

Tasks of the course: as a result of learning the course, knowledge is formed on the methodology of evaluating the quality indicators of food products, as well as monitoring their production at all stages of the technological chain, quality control of raw materials, semi-finished products, and finished products of animal origin. At the same time, the skills of working with regulatory documents and scientific literature are being improved.

**Course structure:**

1. Legislation of Ukraine and the EU regarding the quality of animal products.
  - 1.1. Technological features of production and nutritional value of dairy products.
  - 1.2. Methods of determining indicators quality of milk.
  - 1.3. Control conditions quality of the milk in the farms and milk processing enterprises.
  - 1.4. Qualitative and quantitative methods of milk testing.
2. The modern state of the raw material base for meat processing enterprises and the control system for the safety of meat products.
  - 2.1. The modern state of the raw material base for meat processing enterprises and the control system for the safety of meat.
  - 2.2. Sanitary and hygienic assessment of meat raw materials, meat products.
  - 2.3. Modern methods of determining the freshness of meat and raw mea.
  - 2.4. Quality and safety of meat and meat products.

Hours per week / Credits  
4 SWS / 5 ECTS

Written examination and case study elaboration for 6 ECTS

**Technology of poultry production**

**Assistant Shkurko Maryna  
Sumy National Agrarian University**

**Abstract**

The course aims to teach students the biological characteristics of different types of poultry, systems and methods of keeping adult poultry and rearing young animals; the ability to conduct targeted breeding work, plan production in farms of various types at the lowest cost, and use the best practices of domestic and foreign science and practice.

**Course structure**

1. Biological characteristics of different types of poultry,
2. Systems and methods of keeping adult poultry and rearing young poultry;
3. The ability to conduct targeted breeding work,
4. Plan production in farms of various types at the lowest cost,
5. Use the best practices of domestic and foreign science and practice.

Hours per week / Credits  
4 SWS / 5 ECTS

Exam  
Written examination



**Communications in the international environment and higher education pedagogy**

**Ph.D., Assoc. Prof. Svitlana Khursenko**  
**Sumy National Agrarian University**

**Abstract**

The course assumes a professionally oriented nature and is considered as a constituent element of education. It is an integral part of the formation of an international level specialist, who must be able to communicate and discuss in English in business circles, to obtain new information from English-speaking sources. The subject of EC is regularities and ways of designing the content of education, the process of learning and training of future specialists in engineering specialties.

The purpose of the course is formation of the necessary communicative ability in the spheres of professional and business communication in oral and written forms, skills of practical mastery of a foreign language in various types of speech activity in the scope of the subject, determined by professional needs; mastering the latest information through foreign sources. Preparation of master's students for future teaching activities in institutions of higher education and formation of integral, pedagogical, professional and didactic competences and control competence.

**Course structure**

1. Employment.
2. Business communication.
3. Education system in Ukraine. Development of engineering education.
4. Classification of types of educational activities.
5. Peculiarities of pedagogical communication.
6. The system of control and evaluation of the quality of education.

Hours per week /

Credits 4 SWS /

5ECTS

**Exam**

Written examination

## **Computer Mathematics and Elements of Programming**

**Associate Professor, Tetiana Volina**  
**Sumy National Agrarian University**

### **Abstract**

This course provides students with a theoretical knowledge of the basics of informatics and computer technology, acquire practical skills of working on personal computers using both existing application systems, and programming to solve various engineering problems.

This course allows students:

- master modern concepts of informatics and computer technology;
- know the principle of construction and use of PC hardware;
- compile algorithms for solving problems, write and debug programs in an algorithmic programming language;
- form and solve engineering problems using modern computer mathematics systems (Maple, Matlab, Mathematica).

You will receive more detailed information inside the course.

### **Course structure**

- I. Computing systems. Units of measurement of information. Characteristics of hardware and software.
- II. Software. Characteristics of PC devices.
- III. Algorithmization. Computer systems mathematics. Utilities.
- IV. Programming elements. Linear, branched and cyclic algorithms. Programming of linear algorithms.
- V. Operators. Programming of branched-out algorithms.
- VI. Functions and procedures. Programming of cyclic algorithms.
- VII. Graphics. Construction of curves and surfaces of the 2nd order.
- VIII. Construction of curves of lines and surfaces.
- IX. Vectors. Vector operations. Operation with vectors and matrices.
- X. Matrices. Matrix operations. The solution of systems of linear equations.
- XI. Interpolation. Parabolic interpolation. Linear and parabolic interpolation and approximation.
- XII. Approximation. Parabolic approximation. Curves Bezier.
- XIII. Equation with one variable. Methods of finding the roots of the equations. Root equations with one variable.
- XIV. Differentiation and integration. Finding the derivative and integral of the function.
- XV. Optimization. One-dimensional optimization methods.
- XVI. Calculation work.

Hours per week / Credits  
4 SWS / 5 ECTS

Exam  
Written examination

**Technical Sciences**

**3D-Modeling in Engineering**

**Associate Professor, Tetiana Volina**  
**Sumy National Agrarian University**

**Abstract**

Engineering and computer graphics is one of the subjects that forms the basis for the training of engineers, researchers, designers in the field of agricultural machinery design. The purpose of the discipline is to obtain theoretical knowledge in the basics of engineering graphics, acquire practical skills in creating technical drawings of parts and components, mastering modern graphic systems in the creation of 3D and 2D their models. The subject of the discipline is the graphic design of spatial models, which are carried out using drawing tools and computer technologies in accordance with existing standards. You will receive more detailed information inside the course.

**Course structure**

**I. AutoDesk Inventor.**

I.I. Analysis of the assembly unit (device, unit, machine). Structure and purpose of parts of the product. Sketches of assembly unit details. Matching the dimensions of the overlapping components. Select the number of images, format and scale.

I.II. Autodesk Inventor Interface. Creating spatial details by their sketches. 3D solid-state modeling of parts - extrusion, rotation, kinematic, cross-sections.

I.III. Creating a spatial product model. Assembly operations. Types of conjugated part connections.

I.IV. Performance of the draftsman. Making the cuts, the elements made. Drawing of sizes.

I.V. Performing a drawing. Outline of contiguous parts. Dimensions on assembly drawings. Drawing of item numbers and designation of components of a product. Specification.

**II. SolidWorks**

II.I. Drawing. The number of views, cuts and other conventions on the assembly drawing. Installation, installation and other dimensions. Determining the size of the drawing assembly.

II.II. SolidWorks interface. Basic operations of creating a spatial model of a part. Extrusion and rotation operations.

II.III. Detailing the assembly drawing. Determining the number of images and choosing the formats for working drawings of individual parts. Creation of a model of details by operations "kinematic" and "on sections".

II.IV. Performing assembly operations in SolidWorks - coincidence, involvement.

II.V. Presentation in SolidWorks. Work with color.

Hours per week / Credits

4 SWS / 5 ECTS

Exam

Written examination

**Engineering**

**Occupational health**

**Ph.D., Assoc. Prof. Tetiana Khvorost**  
**Sumy National Agrarian University**

#### Abstract

This course provides students with theoretical and practical knowledge, skills, abilities (competencies) for effective professional activity by providing optimal management of labor protection at enterprises (objects of economic, economic, scientific and educational activity), Formation of responsibility for personal and collective security and awareness of students. The goal is to train future specialists in skills and competencies to ensure effective management of health safety and improve working conditions, taking into account the achievements of scientific and technical progress and international experience, as well as awareness of the inseparable unity of successful professional activity with mandatory compliance with all labor safety requirements.

#### Course structure

1. The importance of safety and health Technological change, the risks, society's response, occupational safety and health
2. Fundamental concepts and terms
3. General Principles of Hazard Control
4. Visual Environment
5. Fire protection and prevention

Hours per week /

Credits 4 SWS / 5

ECTS

#### Exam

Written examination

## **Physics of processes and mathematical methods of scientific research**

**Ph.D., Assoc. Prof. Svitlana Khursenko**  
**Sumy National Agrarian University**

### **Abstract**

Today, scientific activity in higher educational institutions is an integral part of the educational process. This course should contribute to the deepening of scientific knowledge among students and form in them the desire to engage in scientific activity not only within the framework of educational activities, but also for further professional activities and studies in postgraduate and doctoral studies.

The purpose of the course is familiarizing students with current problems of modern scientific research in the field of international relations, providing them with knowledge of the basics of complex scientific research, as well as forming in them the skills of collecting and processing various scientific information.

### **Course structure**

1. General characteristics of scientific research methods.
2. Concept, classification and tasks of the experiment.
3. General principles of organization and planning of the experiment.
4. Metrological support of experimental studies.
5. Experiment planning methods.
6. Methods of processing the results of the experiment.
7. Methods of theoretical scientific research.

Hours per week /

Credits 4 SWS /5

ECTS

### **Exam**

Written examination

**Time Management**

**Ph.D., Assoc. Prof. Tetiana Khvorost**  
**Sumy National Agrarian University**

**Abstract**

This course provides students with technology and Time Management techniques that will allow them to preserve precious time, to distribute it more rationally, and so that they will achieve their goals faster. The goal is to prepare students to the formation of systematic knowledge and practical skills of effective planning of time at personal and corporate levels, as well as mastering methods and rules of achieving personal efficiency by self -motivation and placing priorities.

The purpose of the course is to develop systematic knowledge and practical skills of effective planning of time at personal and corporate levels, as well as mastering methods and rules of achieving personal effectiveness through self -motivation and placing priorities.

**Course structure**

1. Fundamentals of Time Management
2. Timing as a personal time accounting system
3. Planning.
4. Inspection of tasks and its role in decision making.
5. Priorities. Optimization of time spent.
6. Technologies for achieving results.
7. Corporate time management.
8. Computerization of time management.

Hours per week / Credits

4 SWS / 5 ECTS

Exam

Written examination

## THEORY OF OPERATIONAL PROPERTIES OF VEHICLES

**Ph.D., associate professor, Solarov Oleksandr**  
**Sumy National Agrarian University**

### Abstract

The educational component examines physical phenomena that occur when vehicles interact with the road and the environment. The operational properties of the vehicle are studied, which characterize the effectiveness of its use in certain conditions related to the performance of work and the methods of calculating the operational properties. Determine the efficiency of the vehicle during transport work.

### The purpose of the educational component

The purpose of the educational component is the formation of theoretical knowledge and practical skills in the analysis and selection of parameters of vehicles to ensure the implementation of specified operational properties, studying the laws of vehicle movement. The ability to analyze and determine ways to improve the operational properties of vehicles.

### Tasks of the educational component

The main task of studying the educational component "Theory of operational properties of vehicles" is to provide specialists in transport technologies with a high level of theoretical and practical training in assessing the technical level of vehicles, to study the criteria, evaluation indicators, norms of operational properties and methods of their determination with the aim of selection and optimization parameters of rolling stock during cargo transportation in agro-industrial production.

### Course structure

1. The main operational properties and parameters of the car. External speed characteristic.
2. Transmission efficiency. Wheel radii.
3. The rolling theory of an elastic wheel.
4. Clutch of the wheel with the support surface Coordinates of the center of mass of the car.
5. External forces acting on the car.
6. Determination of the normal reactions of the road to the wheels of the car and the possibility of its movement.
7. Indicators of traction-speed properties and equations of motion of the car.
8. Traction and power balance of the car.
9. Dynamic car passport.
10. Braking properties of the car.
11. Fuel efficiency of the car.

12. Vehicle stability.
13. Stability during curvilinear movement. Car skidding.
14. Vehicle controllability.
15. Traction and speed properties of cars with hydromechanical transmission.

Hours per week / Credits  
2 SWS / 5 ECTS

Test for 3 ECTS  
Test and case study elaboration for 5 ECTS