National University of Life and Environmental Sciences of Ukraine (NUBIP of Ukraine)

THE CATALOGUE OF MASTER PROGRAMMES NUBIP OF UKRAINE

Content

MASTER PROGRAMMES OF EDUCATIONAL AND SCIENTIFIC INSTITUTE OF PLANT GROWING AND SOIL SCIENCE

Educational and scientific institute of plant growing and soil science is involved in educational, research, innovative, methodical, production, information and extension and educative activities to obtain higher education, qualification and specialities in the direction “Agronomy” and specialities of this directions aimed at the solution of current problems of science about life, development and extension of up-to-date resource-saving agrotechnologies, soil renewal and protection technology, plant products and their processing quality and safety control.

Faculties which provide Master training:

Agrobiology faculty

It organizes and coordinates training of specialists who have qualification in current production technologies, plant products storage and pre-processing, soil renewal and protection technology, remediation of land polluted with heavy metals, pesticide remains etc., systems of agro chemistry support of current technological processes in plant growing.

Faculty of plant protection

It trains specialists in plant protection who are experts in current bio-, agro- and information technologies, up-to-date means of plant protection from pests, diseases and weeds, their use regulations; who are able to diagnose, identify pathogens, to forecast epizootic, epiphitotes and infection outbreaks appearance.

The Master training and education process at the institute of plant growing and soil science envisages production and research specialization in all specialities. This enables graduates to work at agricultural enterprises which specialize in plant production or in scientific institutions which specialize in scientific problems in agronomy, crops selection and genetics, agrochemistry and soil science, plant protection, fruit and vegetable growing and viticulture or continue their study at post graduate course. The Bachelors have the possibility to continue their study in specialities of the directions “Specific categories”, “Pedagogics of higher school”, “Quality, standardization and certification”, “Business administration” and in speciality “State service” of the direction “State administration”.

Centers of practical training SD of NULES ″Agronomy Research Station″; SD of NULES ″Velyka Snitynka TRF named after O.V. Muzychenko″; Ukrainian Laboratory of AIC products Quality and Safety; Pushcha Vodytsia canning factory; Institute of potato growing of UAAS; Myronivka wheat institute named after V. M. Remeslo; Institute of sugar beet of UAAS; National botanical garden named after M. Gryshko, NAS of Ukraine; National scientific center "Institute of the agriculture of UAAS"; leading agroindustrial companies, enterprises and firms of different forms of ownership, adgofirms “Svitanok”, “Eridon”, “Pioneer”, “Syngenta”, “Dupon”; corporations “”MAK”, “Agro-Soiuz”etc.

The faculty cooperates with leading foreign higher institutions of Europe and the USA: Ghent University (Belgium), Humboldt university (Berlin) (Germany); universities of Iowa, Louisiana, Minnesota and Purdue University of the USA.

Agrobiological faculty and Humboldt University in Berlin are carrying out mutual Master programme “Quality management in agriculture”. The graduates of these programmes obtain the diploma of higher education of both educational institutions.

Scientists of the institute are developing mutual projects with:

- Tokyo agricultural university (Japan) “Extension of up-to-date transplanting technologies in sugar beet growing”;
- Academy of agrarian sciences (Chzhetszian’, China), “Creation, selection and development of berries growing technology”;
- Weihenschtephan university of applied sciences (Germany) “Youth education in agribusiness for Ukraine”;
- Humboldt university (Germany) “the influence of economic transformations and social changes on degradation and protection of marsh soils of Ukraine: the necessity in institutional changes and political reforms”.

Every year 35-40 students have practical training on farms of Switzerland, Ireland, Denmark, Germany and Finland.

Specialities:

8.130102 – “Agronomy”
8.130108 – “Crop selection and genetics”
8.130101 – “Agrochemistry and soil science”
8.130103 – “Fruit and vegetable growing and viticulture”
8.130104 – “Plant protection”

Qualification of Master graduates according to the state classificatory of professions of Ukraine:

In speciality 8.130102 – “Agronomy” 2213.1 – scientific officers (agronomy), 2213.2 – agronomist-researcher, 2213.2– agronomist, 2213.2 – agronomist of airfield, 2213.2 – agronomist-inspector;

In speciality 8.130108 – “Crop selection and genetics” - 2213.2 – specialists in genetics and selection, 2213.2 – agronomist in seed growing, 2213.1 – researcher in crop selection and genetics;

In speciality 8.130101 – “Agrochemistry and soil science” 2114 – experts in geology and geophysics, 2114.1 - scientific officers (geology, geophysics), 2114.1 - scientific officers (cartography, topography), 2213.1 – researcher in

agrochemistry and soil science, 2213.2 – agrochemist, 2213.2 – soil scientist, 2213.2- specialist in agrochemistry and soil science;
In speciality 8.130103 – “Fruit and vegetable growing and viticulture” 2213.1 - scientific officers (agronomy), 2213.2 – agronomist-researcher, 2213.1 - researcher in fruit and vegetable growing and viticulture, 2213.2 - experts in fruit and vegetable growing and viticulture, 2213.2 - experts in floriculture;
In speciality 8.130104 – “Plant protection” – 2213.1 researcher in plant protection.

Master graduates can be employed at agricultural enterprises of different forms of ownership, seed inspection, land inspection, state service “Derzhrodiuchist’” (24 regional and central), “Land protection” service, state quarantine service, scientific and research institutions of NAS of Ukraine and UAAS, national parks and reserves, regional and district agricultural authorities, leading agroindustrial enterprises, etc.

SPECIALITY
8.130102 „AGRONOMY”

Master programmes of industry-oriented specialization

Organic farming	ITSC of agrotechnologies, their standardization and certification (educational building. №7, room №4, tel. 527-86-26) Coordinator – S. P. Tanchyk, doctor of agricultural sciences, professor tel.: 527-82-14
Applied herbarium science	ITSC of agrotechnologies, their standardization and certification (educational building №7, room №4, tel. 527-86-26) Coordinator – S. P. Tanchyk, doctor of agricultural sciences, professor tel.: 527-82-14
Grains production and marketing	ITSC of agrotechnologies, their standardization and certification (educational building №7, room №4, tel. 527-86-26) Coordinator – S. M. Kalens'ka, doctor of agricultural sciences, professor tel.: 527-86-26
Fodder crops production and marketing	ITSC of agrotechnologies, their standardization and certification (educational building №7, room №4, tel. 527-86-26) Coordinator – G. I. Demydas', doctor of agricultural sciences , professor tel.: 527-85-15
Industrial crops production and marketing	ITSC of agrotechnologies, their standardization and certification (educational building №7, room №4, tel. 527-86-26) Coordinator – S. M. Kalens'ka, doctor of agricultural sciences, professor tel.: 527-86-26

Medicinal herbs production and marketing	ITSC of agrotechnologies, their standardization and certification (educational building №7, room №4, tel. 527-86-26) Coordinator – S. M. Kalens'ka, doctor of agricultural sciences, professor tel.: 527-86-26
Seed growing and seed science	ITSC of agrotechnologies, their standardization and certification (educational building №7, room №4, tel. 527-86-26) Coordinator – V. L. Zhemoida candidate of agricultural sciences, associate professor tel.: 527-85-15
Plant products transportation, storage and processing	ITSC of agrotechnologies, their standardization and certification (educational building №4, room №78, tel. 527-86-76) Coordinator – L. F. Skalets'ka, candidate of agricultural sciences, associate professor tel.: 527-86-76

Master programmes of research-oriented specialization

Theory and practice of weed control of agricultural land	ITSC of agrotechnologies, their standardization and certification (educational buildingNo7, room No4, tel. 527-86-26) Coordinator – S. P. Tanchyk, doctor of agricultural sciences, professor tel.: 527-82-14
Theoretical substantiation and elaboration of energy saving ecological farming system in Forest-steppe of Ukraine	MTSC of agrotechnologies, their standardisation and certification (educational building No7, room No4, tel. 527-86-26) Coordinator – S. P. Tanchyk, doctor of agricultural sciences, professor tel.: 527-82-14
Energy saving technologies in fodder production	MTSC of agrotechnologies, their standardisation and certification (educational building No7, room No4, tel. 527-86-26) Coordinator – G. I. Demydas', doctor of agricultural sciences , professor tel.: 527-85-15
Management of crop productivity formation	MTSC of agrotechnologies, their standardisation and certification (educational building No7, room No4, tel. 527-86-26) Coordinator – S. M. Kalens'ka, doctor of agricultural sciences, professor tel.: 527-86-26
Plant products quality depending on the factors of after harvesting processing and storage	MTSC of agrotechnologies, their standardisation and certification (educational building No4, room No78, tel. 527-86-76) Coordinator – L. F. Skalets'ka, candidate of agricultural sciences, associate professor tel.: 527-86-76
Creation and ecological testing of field crops sorts and hybrids of high yield and adaptivity	MTSC of agrotechnologies, their standardisation and certification (educational building No7, room No4, tel. 527-86-26) Coordinator – V. L. Zhemoida candidate of agricultural sciences, assosiate professor tel.: 527-85-15

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines course according to the requirements of MES		
Psychology and pedagogics	2	3,0
Information technologies	1	4,5
Geographical information system	1	3,0
Modeling of technological processes and systems	1	3,0
Adapting farming systems	1	3,0
Systems of current intensive technologies	2	1,5
World agrotechnologies	2	1,5
Biotechnology in plant growing	2	2,5
Special genetics	2	1,5
Crop yields forecast and programming	1	2,5
Methods and organization of researches in agronomy	1	1,5
Economy and organization of agrarian service	2	3,0
Current problems of agroecology	1	1,5
Total		**32,0**
Disciplines course chosen by the university	2	**12,0**
Disciplines course chosen by students	3	**13,0**
State Attestation		
Practice	1,2	14,0
Preparation and defense of master's paper	3	12,0
Total		**26,0**
Total		**90,0**

PRODUCTION SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
Discipline course „Agroeconomic substantiation of plant products organization and technology"		
Current systems of ecological farming	2	2,5
Innovative technologies in plant growing	2	2,0
Agrotechnologies of creation and use of fodder land	2	2,5
Sort resources of field crops and their seed growing peculiarities	2	2,5
Standardization and certification of technologies in plant growing	2	2,5
Total		**12,0**

Master programme

ORGANIC FARMING

Analysis of farming systems condition, the direction of their development on the base of branch ecologisation, solution of environment protection problems, production of environmentally friendly farming products of high quality

Disciplines course chosen by students	Semester	Credits
Scientific aspects of farming	3	2,5
Crop rotation in current farming	3	3,0
Resource saving technologies of machinery soil cultivation	3	2,5
Integrated weed control in current farming	3	2,5
Agroecological substantiation and elaboration of farming adapting systems	3	2,5
Total		**13,0**

Proposed topics for master's papers:

1. Agroecological analysis and improvement of farming adapting systems at enterprises of different forms of ownership.
2. Economic and technological analysis and optimization of farming adapting system branches for enterprises of different forms of ownership.
3. Substantiation of resource provision of organic fertilizers for humus self-supporting under different soil and climatic conditions.

Master programme

APPLIED HERBARIUM SCIENCE

Monitoring and systems of integrated weed control of arable lands under different farming systems

Disciplines course chosen by students	**Semester**	**Credits**
Segetal and ruderal vegetation	3	3,0
Agrophytocenosis monitoring and weed forecast of crops	3	2,5
Management of weed component of field agrophytocenoses	3	2,5
Scientific aspects of herbarium science	3	2,5
Scientific principles of weed control in agrophytocenoses	3	2,5
Total		**13,0**

Proposed topics for master's papers:

1. Integrated management of weed component of agrophytocenoses in current farming systems.
2. Monitoring, formation and development of weed groups and study of their control efficiency in current farming systems.
3. Monitoring and forecast of potential and actual weed spreading and calculation of biological and technological weed damage on crop rotation fields.

Master programme

GRAINS PRODUCTION AND MARKETING

Grains production that envisages the study of biological peculiarities, increase of grains range suitable for growing in proper soil and climatic zones, crop growing technologies, product quality standards; economy, marketing and management of grain production.

Disciplines course chosen by students	**Semester**	**Credits**
Technological and marketing principles of grain crops production	3	5,0
Seed science and methods of grain crops seeds quality identification	3	4,0
Power and raw plant resources	3	4,0
Total		**13,0**

Proposed topics for master's papers:

1. Economic and ecological peculiarities of grain crops growing according to the world quality standards.
2. Production and grain crops seeds quality control according to the world standards.
3. Physiological and biochemical principles of grain crops increase and their resistance to extreme environment factors.

Master programme

FODDER CROPS PRODUCTION AND MARKETING

Fodder crops growing as the source of nutrient green fodder crops for animal feeding and raw for stocking up of preserved fodder of high quality.

Disciplines course chosen by students	**Semester**	**Credits**
Field and meadow fodder production	3	4,0
Energy saving technologies of fodder production	3	3,0
Fodder crops growing for seeds and their quality identification methods	3	3,0
Technological and marketing principles of fodder production	3	3,0
Total		**13,0**

Proposed topics for master's papers:

1. Schemes elaboration of optimal regimes of intensive haying to provide their productive long life.
2. Methods of optimization of perennial grass sowing depending on farm use of grass stand.
3. Optimization of technologies of fodder planting fillers growing in different soil and climatic zones under market conditions.
4. Development, improvement of the elements of current technologies in fodder production on the base of complex ecologization of farming.

Master programme

INDUSTRIAL CROPS PRODUCTION AND MARKETING

Industrial crops production: growing technologies, Ukrainian and international product quality standards, economy, marketing and management of the branch.

Disciplines course chosen by students	**Semester**	**Credits**
Technological and marketing principles of industrial crops growing	3	4,5
Seed science and methods of industrial crops seed quality determination	3	4,5
Phytoenergy	3	4,0
Total		**13,0**

Proposed topics for master's papers:

1. Economic and technological peculiarities of industrial crops growing according to the world quality standards.
2. Production and industrial crops seed quality control according to the world standards.
3. Innovative technologies of phytoenergetic crops growing as raw for phyto-fuel.

Master programme

MEDICINAL HERBS PRODUCTION AND MARKETING

Production of medicinal herbs that envisages the study of biological peculiarities of medicinal herbs implemented into a culture, introduction of wild species from other geographical zones; technologies of medicinal herbs growing; raw quality standards, quality determination methods; medicinal herbs seed growing and seed science, economy, marketing and management of the branch.

Disciplines course chosen by students	**Semester**	**Credits**
Technological and marketing principles of medicinal herbs growing	3	3,0
Bioecological peculiarities of medicinal herbs introduction and use	3	3,0
Storage, certification and standardization of medicinal herbs raw	3	3,0
Pharmacological features of medicinal herbs	3	2,0
Production of medicinal herbs seed and planting stock	3	2,0
Total		**13,0**

Proposed topics for master's papers:

1. Management of economy components formation in medicinal herbs phytomass according to the Ukrainian and world standards.
2. Technological and pharmacological peculiarities of medicinal herbs in industrial production.
3. Medicinal herbs phytomass – standardization and certification according to the Ukrainian and world standards.

Master programme

SEED GROWING AND SEED SCIENCE

The main indices of seed quality according to the state standards. The factors influencing seed quality, its germination, physical, biochemical and physiological features. Problems of seed control. Scientific principles of seed growing, sort qualities and yield features of seed. Seed growing system, sort rotation and sort renewal.

Disciplines course chosen by students	**Semester**	**Credits**
Crops seeds growing	3	4,0
Seed science	3	4,0
Sorts study and seed certification	3	3,0
After harvesting treatment and storage of seed cultural material	3	2,0
Total		**13,0**

Proposed topics for master's papers :

1. Economic and biological features and peculiarities of seed growing of crops new sorts and hybrids.
2. Sort, sowing and yield qualities of seed depending on environment biotical or abiotical factors.
3. Seed growing of heterosis hybrids under proper Ukrainian conditions.
4. Peculiarities of industrial seed growing under current conditions.

Master programme

PLANT PRODUCTS TRANSPORTATION, STORAGE AND PROCESSING

Technologies of after harvesting completion (sorting, sizing, drying and aeration, etc), storage of grain, fruit and vegetable products, industrial raw material, principles of pre-processing technology of grain, fruit, vegetables, potato tubers.

Disciplines course chosen by the university	Semester	Credits
Disciplines course „Losses reduction, quality improvement on the stages of after harvesting completion, storage and pre-processing of plant products which provide its high marketability "		
After harvesting completion, storage and transportation of plant products	2	4,5
Science of commodities of plant products	2	4,0
Technochemical control of plant products	2	3,5
Total		**12,0**
Disciplines course chosen by students		
Standardization and certification of processing products of plant raw material	3	2,5
Processing of grain and industrial raw material	3	4,0
Processing of fruit and vegetables	3	4,0
Physical infrastructure of plant products storage and processing	3	2,5
Total		**13,0**

Proposed topics for master's papers :

1. Development and improvement of methods of after harvesting completion and storage of grain and legumes products.
2. Development and improvement of methods of after harvesting completion and storage of industrial raw material.
3. After harvesting completion, storage and processing of potato and fruit and vegetable products..

RESEARCH ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
Disciplines course „Scientific substantiation of plant products organization and technologies ”		
Scientific substantiation of farming systems	2	2,5
Theory of agrosystem stability	2	2,0
Ecologization of technological processes in fodder production	2	2,5
Genetic and selective aspects of sorts creation	2	2,5
Standardization and certification of technological processes in plant growing	2	2,5
Total		**12,0**

Master programme

THEORY AND PRACTICE OF WEED CONTROL OF AGRICULTURAL LAND

Methodology of herbarium science problems research, ways and methods of agro phytocenoses.

Disciplines course chosen by students	Semester	Credits
Theoretical principles of herbarium science	3	3,0
Weed biology and ecology	3	2,5
Monitoring and forecast of agricultural lands weed spreading	3	2,5
Weed spreading control systems	3	3,0
Methods of herbarium science problems research	3	2,0
Total		**13,0**

Proposed topics for master's papers:

1. Development of measures of tillage weed spreading control systems in different farming systems.
2. Study of ecology, weed biology and their damage on crops .
3. Formation and development of weed grouping and study of the efficiency of their control measures in current farming systems.

Master programme

THEORETICAL SUBSTANTIATION AND ELABORATION OF ENERGY SAVING ECOLOGICAL FARMING SYSTEM IN FOREST-STEPPE OF UKRAINE

Substantiation of energy saving ecological farming under conditions of combination of soils natural potential and agrotechnical measures to increase soils fertility, to obtain ecologically friendly AIC products.

Disciplines course chosen by students	Semester	Credits
Zone farming systems	3	3,0
Scientific aspects of farming	3	2,0
Theoretical and applied herbarium science	3	3,0
Ecological problems of farming	3	3,0
Methods and organization of researches in farming	3	2,0
Total		**13,0**

Proposed topics for master's papers :

1. Ecological and economic analysis and development of crop rotation systems for enterprises of different forms of ownership.
2. Agroeconomic analysis and improvement of adaptive farming systems at enterprises of different forms of ownership.
3. Ecological and economic analysis and development of some branches of energy saving ecological farming for enterprises of different forms of ownership.

Master programme

ENERGY SAVING TECHNOLOGIES IN FODDER PRODUCTION

Substantiation and development of elements of energy and resource saving technologies of fodder growing on meadows and grass lands.

Disciplines course chosen by students	Semester	Credits
Scientific and technological principles of fodder production	3	4,0
Fodder production biologization	3	2,5
Management of fodder crops quality in technological process	3	4,0
Methods and organization of researches in fodder production	3	2,5
Total		**13,0**

Proposed topics for master's papers :

1. Monitoring of productivity of fodder crops new sorts and hybrids according to the level of adaptivity to environment stress conditions.
2. Biological stimulation as the way of photosynthesis potential increase and fodder crops agrocenosis productivity.

3. Energy evaluation and crops productivity in different periods of green mass supply under fodder production lines saturation with traditional and rare perspective crops and different methods of their growing.

Master programme

MANAGEMENT OF CROP PRODUCTIVITY FORMATION

Scientifically substantiated management of crops productivity formation taking into account their adaptive ability and resistance to biotical, abiotical stresses and agrotechnical measures use aimed at realization of genetically determined biological potential and obtaining stable crop yields of new quality.

Disciplines course chosen by students	Semester	Credits
Crops ecology	3	2,5
Theoretical and agrotechnical principles of plant growing	3	2,5
Biometry	3	2,5
Soil science	3	3,0
Methods and organization of researches in plant growing	3	2,5
Total		**13,0**

Proposed topics for master's papers:

1. Technological peculiarities of production of competitive plant products under Euro integration.
2. Adaptive peculiarities of crops and ways of realization of their biological potential under global climate changes.
3. Ways of increase of use of photosynthesis active radiation by crops.

Master programme

CREATION AND ECOLOGICAL TESTING OF FIELD CROPS SORTS AND HYBRIDS of HIGH YIELD AND ADAPTIVITY

Introduction into practice sorts resistant to abiottic and biotic environment factors is the most effective method of crop productivity increase. The programme gives fundamental knowledge about plant protection mechanisms. Study of physiological and biological mechanisms which provide morphological plant resistance to stresses and pathogens, methods of evaluation and creation of obtained material adaptive to extreme environment conditions.

Disciplines course chosen by students	Semester	Credits
Selection of geterosis hybrids	3	3,0
Genetic principles of selection	3	3,0
Special selection of crops	3	3,0
Seed growing of crops	3	4,0
Total		**13,0**

Proposed topics for master's papers :

1. Peculiarities of creation of obtained material with high productivity and quality.
2. Creation of donors and sources of economically valuable qualities for selective and genetic purposes..
3. Crops collection formation and their study.

Master programme

PLANT PRODUCTS QUALITY DEPENDING ON THE FACTORS OF AFTER HARVESTING PROCESSING AND STORAGE

This programme envisages trends of influence of factors of growing, after harvesting completion, methods and regimes of different purpose grain storage, potato tubers, vegetables, fruit, industrial raw material on their storage, technological and seed qualities and the influence of processing factors on finished products quality (grain, potato tubers, vegetables, fruit).

Disciplines course chosen by the university	**Semester**	**Credits**
Discipline course „Scientific principles of long term storage of grain (seeds)* vegetables, fruit, and industrial raw material*. The ways of obtaining of biologically valuable and environmentally friendly pre-processed products"		
Methods and scientific researches of plant products storage and processing	2	3,0
Biochemical changes of plant products in the process of storage	2	4,0
Scientific substantiation of technologies of after harvesting completion, plant products storage and transportation	2	5,0
Total		**12,0**
Disciplines course chosen by students		
Plant products processing	3	4,0
Science of commodities of raw material and processed products	3	3,5
Technical biochemistry	3	3,0
Management of plant products quality and certification	3	2,5
Total		**13,0**

Proposed topics for master's papers:

1. Technological peculiarities of grain of flour and cereals crops depending on methods and regimes of after harvesting completion and storage.
2. Suitableness of new sorts and hybrids of fruit and vegetable products to after harvesting completion, storage and.
3. Technological qualities of sugar beet roots depending on harvesting and growing factors.

SPECIALITY
8.130108 „SELECTION AND GENETICS OF CROPS”

Master programme of industry-oriented specialization

State scientific and technical expertise of plants sorts and their legal protection	ITSC of agrotechnologies, their standardization and certification (educational building №7, room №4, tel. 527-86-26) Coordinator – V. L. Zhemoida candidate of agricultural sciences, associate professor tel.: 527-85-15

Master programme of research- oriented specialization

Use of biological varieties as sources of economic valuable qualities and the creation of new donors for selection of new sorts and hybrids	ITSC of agrotechnologies, their standardization and certification (educational building №7, room №4, tel. 527-86-26) Coordinator – V. L. Zhemoida candidate of agricultural sciences, associate professor tel.: 527-85-15

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines course according to the requirements of MES University of Life and Environmental Sciences of Ukraine		
Psychology and pedagogics	1	1,5
Modelling of technological processes and systems	1	2,5
Information technologies	1	2,5
Special genetics of agricultural crops	2	3,0
Labour protection in the industry	1	1,5
Genetic engineering and biotechnology	1	3,0
Standardization and products quality management	2	1,5
Genetic resources of plant	2	2,5
Current methods of selection and genetic researches	1	2,5
Immunity of plants against diseases and pests	2	1,5
Special selection and seed growing of meadow cultures	2	4,0
Special selection and seed growing of forage crops	2	2,5
Special selection and seed growing of vegetables and fruit	2	2,5
Ecological and adaptive selection	2	2,5
Genetics of quantitative signs	2	1,5
Total		**35,0**
Disciplines course chosen by the university		**10,0**
Disciplines course chosen by students	3	**14,0**
State Attestation	3	
Practice		13,0
Preparation and defence of master's paper	1,2	11,0
Total	3	**24,0**
Total		**90,0**

INDUSTRY-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
State qualified expertise of plants sorts	3	3,5
Sorts certification	3	3,5
Legal protection of plants sorts	3	3,0
Total		**10,0**

Master programme

STATE SCIENTIFIC AND TECHNICAL EXPERTISE OF PLANTS SORTS AND THEIR LEGAL PROTECTION

The formation of national sorts resources provides country's foodstuff safety. The main tasks of state quality expertise of crops sorts and hybrids in Ukraine, its kinds (WOS-tests and spreading ability expertise in Ukraine), the main stages of expertise, ways and methods of sort study. Registration of sorts and hybrids, post-registration study. Sorts and hybrids legal protection, inspection control in the process of their civil circulation.

Disciplines course chosen by students	Semester	Credits
Inspection monitoring and control	3	4,0
Information technologies in State scientific and technical expertise	3	4,0
Post-registration sorts study	3	6,0
Total		**14,0**

Proposed topics for master's papers:

1. Monitoring of new crop sorts and hybrids in terms of post-registration study.
2. UPOV methods adaptation of new plant sorts expertise on WOS-test.
3. Complex evaluation of new crop sorts in state registration.
4. The peculiarities of identification features of plants and their use in protection ability expertise.

RESEARCH-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
Selection and seed study of heterosis hybrids	3	4,0
Sort study and plant sorts rights protection	3	3,0
State quality expertise of crops sorts	3	3,0
Total		**10,0**

Master programme

USE OF BIOLOGICAL VARIETIES AS SOURCES OF ECONOMIC VALUABLE QUALITIES AND THE CREATION OF NEW DONORS FOR SELECTION OF NEW SORTS AND HYBRIDS

Genetic and selective aspects of creation of current competitive crop sorts and hybrids adapted to bio and abiotic environment factors. Methods of creation and evaluation of new obtained material, selection process technology. The peculiarities of current seeding under the AIC reformation.

Disciplines course chosen by students	Semester	Credits
Applied genetics	3	4,0
Selection to increase adaptive potential	3	4,0
Current methods of sorts and hybrids identification	3	6,0
Total		**14,0**

Proposed topics for master's papers:

1. Improvement of crop selection methods to increase adaptive potential.
2. Study of peculiarities of display and inheritance of the main economic and valuable features of crops.
3. Monitoring of obtained material in quality products selection.
4. Creation of obtained material using current methods of selection.

SPECIALITY
8.130101 „AGROCHEMISTRY AND SOIL SCIENCE”

Master programme of industry-oriented specialization

Soil science, monitoring of soil quality and their protection	ITSC of soil science, soil quality and protection (educational building. №2, room №13, tel. 527-86-31) Coordinator – A. D. Balaev, doctor of agricultural sciences, professor tel.: 527-81-02
Agricultural chemistry service of current technologies in plant growing	ITSC of agrochemistry service, quality and safety of plant products (educational building №2, room №8, tel. 527-88-17) Coordinator – A. V. Bykin, doctor of agricultural sciences, professor tel.: 527-87-83

Master programme of research- oriented specialization

Protection and land quality improvement using local resources and cultivation minimalization	ITSC of soil science, soil quality and protection (educational building. №2, room №13, tel. 527-86-31) Coordinator – A. D. Balaev, doctor of agricultural sciences, professor tel.: 527-81-02
Improvement of diagnostics of nitrogen nutrition of crops and their systems	ITSC of agrochemistry service, quality and safety of plant products (educational building №2, room №8, tel. 527-88-17) Coordinator – A. V. Bykin, doctor of agricultural sciences, professor tel.: 527-87-83

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines course according to the requirements of MES		
Management psychology	1	1,5
Labour protection in the branch	1	2,0
Computer technology of soil fertility programming and crops productivity	2	2,0
GIS of agro landscapes and principles of geostatictics	2	2,0
Environment chemistry	1	4,0
Management of soil regimes	2	4,5
Soils fertility protection and renewal	1	6,0
Management of nutrition in greenhouses under drop irrigation	2	4,0
Soils quality, products standardization and certification	3	3,0
Agrochemistry service	2	4,5
Agrosphere waste utilization and sterilization	3	4,0
Technology of rational land use	1	4,0
Radioecology	1	2,0
Total		**43,5**
Disciplines course chosen by the university	1,2	**10,0**
Disciplines course chosen by students	3	**6,5**
State Attestation		
Practice	1,2	14,0
Preparation and defence of master's paper	3	9,0
Total		**23,0**
Total		**90,0**

INDUSTRY-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
Methodology of scientific researches	1	2,0
Models of technological management in agricultural management service	2	4,0
Lands re-cultivation	2	4,0
Total		**10,0**

Master programme

SOIL SCIENCE, MONITORING OF SOIL QUALITY AND THEIR PROTECTION

Determination and analysis of physical, water and physical, physical and chemical, biological and agrochemical soil qualities on the base of field and laboratory researches. Determination of ecologic and genetic status and potential soils fertility refer to some crops or their groups and other specialized soil use. Determination of quality and development level of degradation processes. Measures of rational use and soils fertility renewal.

Study of methods of re-cultivation of contaminated soils, increase of potential soils fertility after their contamination, soils destruction and degradation and also landscapes and biosphere on the whole as a result. Metrological principles of current methods of instrumental analysis and peculiarities of current instrumental methods of analysis.

Disciplines course chosen by students	Semester	Credits
Methods of soil surface research	3	2,0
Soils appraisal	3	2,0
Monitoring of soils quality	3	2,5
Total		**6,5**

Proposed topics for master's papers:

1. Reformation of control organization of land use and protection under the condition of Euro integration.
2. Forecasting of changes of soils qualities under land reform.
3. Qualitative and expert evaluation of lands of agricultural purpose under land market formation.
4. Influence of different farming systems on soils fertility.

Master programme

AGRICULTURAL CHEMISTRY SERVICE OF CURRENT TECHNOLOGIES IN PLANT GROWING

Methodological and agrotechnical principles of agrochemistry service in plant growing. Creation of conditions of stable development of agroecological systems. Concept and formation of agrobiological monitoring. Control of agrophytocenoses qualitative state and its management.

Ukrainian and leading foreign systems of agrochemical support of current technological processes and technologies in plant growing. Analytical and practical use of current methods of soils examination, distance probing of soil surface, elaboration of budget and technical documentation, agrochemical cartograms, fields passports.

Disciplines course chosen by students	Semester	Credits
Economic and organizational provision of agrochemical service	3	2,0
Diagnostics of nutrition and fertilization strategies	3	2,0
Management of agrochemical resources	3	2,5
Total		**6,5**

Proposed topics for master's papers:

1. Business plans of agrochemical accompaniment of specialized firms and agricultural enterprises activity.
2. Economic and ecological risks management optimizing plant nutrition.
3. Modeling of plant products quality taking into account soil properties.

RESEARCH-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
Methodology of scientific researches	1	2,0
Models of technological management in agrochemical service	2	4,0
Lands re-cultivation	2	4,0
Total		**10,0**

Master programme

PROTECTION AND LAND QUALITY IMPROVEMENT USING LOCAL RESOURCES AND CULTIVATION MINIMALIZATION

Anthropogenic influence on soils fertility and lands quality, evaluation of agroecological efficiency of various farming systems and development of soil protection resource saving technologies of crop growing using different kinds of organic fertilizers and soil cultivation minimalisation. Substantiation of measures of soils protection and soil fertility renewal using the indices of ecological soil state. Creation of methods of making and using land quality cartograms.

Disciplines course chosen by students	Semester	Credits
Soils diagnostics	3	2,0
Soils organic substance	3	2,0
Kinetics and levels of soil surface organization	3	2,5
Total		**6,5**

Proposed topics for master's papers:

1. Elaboration of scientific principles of the formation of ecologically stable agrolandscapes, land use systems and soil protective agrotechnologies.
2. Monitoring of soils and ecological and agrochemical passportization in the strategy of stable development of nature and society.
3. Study of degradation processes in soils of Ukraine and development of methods and technologies of their rehabilitation.
4. Geochemical analysis of soil surface of different types of ecosystems and development of measures of their resistance increase.

Master programme

IMPROVEMENT OF DIAGNOSTICS OF NITROGEN NUTRITION OF CROPS AND THEIR SYSTEMS

Methodology, methods, generalization and scientific research statistics results processing aimed at determination of rational methods of regulation of productive process in plant growing, regulated formation of some indices of products quality. Determination of strong interrelations between the provision of plants with nutritive elements and the level of future yield on the base of phenological observations and analytical experiments.

The main indices of biological, biochemical, technological product quality. Organization of plant product control. State system of certification and product quality control. Standards of scientific research methods in agrochemistry, their use under different conditions and tasks, methods of plant products quality management.

Disciplines course chosen by students	Semester	Credits
Diagnostics of plants nutrition	3	2,0
Management of plant condition nutrition	3	2,0
Management of plant products quality	3	2,5
Total		**6,5**

Proposed topics for master's papers:

1. Regulation of soils quality to evaluate the plant nutrition conditions using the strategy of stable development of nature and society.
2. Management of crops nutrition to achieve programmed yield of high quality.
3. Management of plant products quality using integrated management of nutrition elements
4. Diagnostics of plants nutrition to create competitive products in WTO system.

SPECIALITY
8.130103 „FRUIT AND VEGETABLE GROWING AND VITICULTURE”

Master programme of industry-oriented specialization

Gardening	TSC of fruit and vegetable growing and viticulture (educational building №1, room № 44, tel. 527-85-59) Coordinator – B. T. Hontar, candidate of agricultural sciences, associate professor tel.: 527-85-59
Vegetable growing	TSC of fruit and vegetable growing and viticulture (educational building №1, room № 44, tel. 527-85-59) Coordinator – Z. D. Sych, doctor of agricultural sciences, professor tel.: 527-81-69
Greenhouses	TSC of fruit and vegetable growing and viticulture (educational building №1, room № 44, tel. 527-85-59) Coordinator – O. M. Tsyz’, candidate of agricultural sciences, associate professor tel.: 527-80-67
Mushroom growing	TSC of fruit and vegetable growing and viticulture (educational building №1, room № 44, tel. 527-85-59) Coordinator – O. M. Tsyz’, candidate of agricultural sciences, associate professor tel.: 527-80-67

Master programme of research- oriented specialization

Research and innovation in gardening	TSC of fruit and vegetable growing and viticulture (educational building №1, room № 44, tel. 527-85-59) Coordinator – B. T. Hontar, candidate of agricultural sciences, associate professor tel.: 527-85-59
Research and innovation in vegetable growing	TSC of fruit and vegetable growing and viticulture (educational building №1, room № 44, tel. 527-85-59) Coordinator – Z. D. Sych, doctor of agricultural sciences, professor tel.: 527-81-69

Research and innovation in greenhouses	TSC of fruit and vegetable growing and viticulture (educational building №1, room № 44, tel. 527-85-59) Coordinator – O. M. Tsyz', candidate of agricultural sciences, associate professor tel.: 527-80-67
Standardized technologies of processing and storage of fruit and vegetable	ITSC of agrotechnologies and their standardization and certification (educational building №4, room №78, tel. 527-86-76) Coordinator – L. F. Skalets'ka candidate of agricultural sciences, associate professor tel.: 527-86-76

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines course according to the requirements of MES		
Principles of agrarian consulting	1	2,5
Computer technologies in gardening, vegetable growing and viticulture	1	2,5
Applied genetics with principles of cytology	2	2,0
Biochemistry of fruit, vegetable and grapes	2	2,0
Methods of research using PC	1	3,0
World agrotechnoogies in gardening, vegetable growing and viticulture	1	4,0
Labour protection in the branch	2	2,0
Biotechnology	2	3,0
Principles of GIS	1	3,0
Psychology of management	2	2,0
Agrobusiness and marketing in gardening, vegetable growing and viticulture	2	2,0
Exchange market	1	1,0
Total		**29,0**
Disciplines course chosen by the university	2	**19,0**
Disciplines course chosen by students	3	**15,0**
State attestation		
Practice	1,2	14,0
Preparation and defence of master's paper	3	6,0
Total		**20,0**
Total		**90,0**

INDUSTRY-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
Cultivation buildings	2	5,0
Floriculture in greenhouses	2	5,0
Mushroom industry	2	4,5
Sorts study of vegetable	2	4,5
Total		**19,0**

Master programme

GARDENING

Master students study current technologies in gardening (use of spore sorts, methods of fruit regulation on low plants, use of biological and active substances to increase yield and resistance to unfavorable environment factors). As a result they should be able to programme and forecast fruit plantations yield.

Disciplines course chosen by the university	Semester	Credits
Current technologies in gardening	3	5,5
Advanced technologies in nursery gardens	3	5,5
Forecast and programming of fruit yield	3	4,0
Total		**15,0**

Proposed topics for master's papers:

1. Use of dwarfish wildings to create highly productive apple plantations adapted to mechanized gathering.
2. Research of reproduction ways of rare species of fruit trees.
3. Influence of ways of formation of golden currants plantations on their productivity and main biochemical indices.

Master programme

VEGETABLE GROWING

Master students study current experience of vegetable growing on fields, complex technologies of new heterosis hybrids growing using the systems of drop irrigation and fertigation, methods of creation of sorts and hybrids with the qualities programmed beforehand.

Disciplines course chosen by students	**Semester**	**Credits**
World growing agrotechnologies and vegetable after harvesting preparation	3	5,5
Forecast and programming of vegetable yields	3	3,5
Selection of sorts and heterosis hybrids	3	6,0
Total		**15,0**

Proposed topics for master's papers :

1. Creation of heterosis hybrids of cauliflower resistant to alternariosis and vessels bacteriosis.
2. Forecast of green vegetables productivity.
3. Influence of methods of golden currant plantations formation on their productivity and main biochemical fruit indices.

Master programme

GREENHOUSES

Technologies of crop growing in different types of cultivation buildings, peculiarities of current assortment of the main cultures recommended for growing in winter-spring, summer-autumn and prolonged cultures.

Disciplines course chosen by students	**Semester**	**Credits**
Selection and seed growing of vegetables in greenhouses	3	6,0
Hydroponics	3	6,0
Integrated plant protection in green houses	3	3,0
Total		**15,0**

Proposed topics for master's papers :

1. Selection of indetermined tomato hybrids for growing in winter block greenhouses under conditions of low-capacity hydroponics.
2. Determination of the efficiency of Ukrainian immune modulators use on cucumbers growing in winter-spring culture.
3. Improvement of straddle technology of head lettuce growing using artificial light.

Master programme

MUSHROOM GROWING

Master students study assortment of edible mushrooms which are cultivated according to intensive and extensive technologies, do research of main economic and biological indices of two spores champignon culture, oyster mushroom and other types of mushrooms.

Disciplines course chosen by students	**Semester**	**Credits**
Intensive mushroom growing	3	6,0
Extensive mushroom growing	3	5,0
Integrated protection of cultivated mushrooms	3	4,0
Total		**15,0**

Proposed topics for master's papers:

1. Research of the influence of composts and mixtures components for on two spores champignon culture productivity.
2. Determination of the efficiency of methods of mycelium inoculation of oyster mushroom of different types of substrates.
3. Research of methods of the creation of two spores champignon culture with determined biological and economic qualities.

RESEARCH-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
Partial sort science of fruit and berries	2	5,0
Sort study of vegetables	2	5,0
Floriculture in greenhouses	2	5,0
Mushroom growing	2	4,0
Total		**19,0**

Master programme

RESEARCH AND INNOVATION IN GARDENING

Master students study current experience of leading institutions of Ukraine and foreign countries in creation of intensive plantations of pip fruit, drupaceous fruit, berries, rare fruit. Prospective directions in research and tendencies of the development of gardening and viticulture in Ukraine and in the world.

Disciplines course chosen by students	Semester	Credits
Research and innovation in gardening and viticulture	3	6,0
Selection and introduction of new fruit	3	3,5
Forecast and programming of fruit yield	3	5,5
Total		**15,0**

Proposed topics for master's papers:

1. Choice of frost resistant paternal couples in blackberry selection.
2. Improvement of technologies of vegetative reproduction of golden currants (bilberries, gooseberries, blackberries and other rare cultures).
3. Study of the methods of the formation of apple trees suitable for intensive growing technologies.

Master programme

Research and innovation in vegetable growing

Current experience of leading scientific institutions of Ukraine and foreign countries in creation of heterosis hybrids of vegetables and melon cultures and their growing technologies in different soil and climatic zones. Normative and legal documents which regulate the procedure of vegetables and melon cultures approbation and the peculiarities of innovation in vegetable growing are studied.

Disciplines course chosen by students	Semester	Credits
Approbation of vegetables and melon cultures	3	6,0
Organic vegetable production	3	6,0
Research and innovation in vegetable growing in greenhouses	3	3,0
Total		**15,0**

Proposed topics for master's papers:

1. Research of elements of vegetable growing technologies based on the principles of organic vegetable production.
2. Use of different elements of technologies to precipitate obtaining of early greenery products from fields.
3. Study of the efficiency of physical and chemical methods of pre-sowing treatment of vegetable and melon culture seeds.

Master programme

Research and innovation in greenhouses

Current experience of leading scientific institutions of Ukraine and foreign countries in creation of heterosis hybrids of vegetables and melon cultures in different soil and climatic zones. Normative and legal documents which regulate the procedure of vegetables and melon cultures approbation in vegetable growing are studied.

Disciplines course chosen by students	Semester	Credits
Organization and methods of research in greenhouses	3	5,5
Scientific and innovative support of greenhouses branch	3	5,5
Organization and methods of research in mushroom growing	3	4,0
Total		**15,0**

Proposed topics for master's papers:

1. Study of currant methodical principles of doing vegetative researches in greenhouses.
2. Introduction of new plant species to grow under condition of prolonged culture in winter block greenhouses.
3. Research of methods of the formation of the amount of cucumber plants using phyto monitoring.

Master programme

Standardized technologies of processing and storage of fruit and vegetable

Master students study current methods of vegetable, fruit and viticulture products processing. Plant growing factors that influence on fruit and vegetable products storage ability are researched. New regimes and methods of fruit and vegetable storage are developed.

Disciplines course chosen by students	**Semester**	**Credits**
Scientific substantiation of modes of drying, elements of technology of processing of seeds of new and perspective varieties of vegetable and fruit	3	6,0
Study of influence of growing factors, terms of harvesting and completion of storage capacity of vegetables and fruit	3	6,0
Study of influence of regimes, methods of storage on quality of fruit and vegetables of the long (short) term of storage	3	3,0
Total		**15,0**

Proposed topics for master's papers:

1. Study of drying regimes of new late matured sorts of carrot of Ukrainian selection.
2. Research of the efficiency of methods of after harvesting completion of cabbage for its storage ability and main biochemical indices..
3. Research of methods of after harvesting completion of tomatoes with high carotene contents.

SPECIALITY
8.130104 „PLANT PROTECTION”

Master programme of industry-oriented specialization

Phytomedicine	TSC of phytomedicine and phytosanitation in plant growing (educational building №4, room № 42, tel. 527-85-77) Coordinator– M. M. Kiryk, doctor of biological sciences, professor tel. 527-82-11
Phytosanitary monitoring	TSC of phytomedicine and phytosanitation in plant growing (educational building №4, room № 42, tel. 527-85-77) Coordinator– M. M. Dolia, doctor of agricultural sciences, tel. 527-85-14
Plant quarantine	TSC of phytomedicine and phytosanitation in plant growing (educational building №4, room № 42, tel. 527-85-77) Coordinator – O. O. Sykalo, candidate of agricultural sciences, associate professor tel. 527-82-12
Biological plant protection	TSC of phytomedicine and phytosanitation in plant growing (educational building №4, room № 42, tel. 527-85-77) Coordinator– T. R. Stefanovs’ka, candidate of biological sciences, associate professor tel. 527-85-14

Master programme of research- oriented specialization

Biological substantiation of control of obligate and necrotrophic plant pathogens	TSC of phytomedicine and phytosanitation in plant growing (educational building №4, room № 42, tel. 527-85-77) Coordinator– M. M. Kiryk, doctor of biological sciences, professor tel. 527-82-11
Insects amount control in agrocenoses of crops	TSC of phytomedicine and phytosanitation in plant growing (educational building №4, room № 42, tel. 527-85-77) Coordinator – Ya. O. Likar, candidate of agricultural sciences, associate professor tel. 527-85-14

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Business foreign language	1	1,5
Philosophy of science and innovation development	1	1,5
Strategy of stable nature development and society	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Total		**6,0**
Compulsory disciplines course according to the requirements of MES		
Economy and agrarian service organization	1,2	2,0
Labour protection in plant protection	2	2,0
Marketing and management in plant protection	2	2,0
Agricultural, land and environmental law	2	2,0
Information technologies in entomology	1	2,0
Insects breeding technology	1	3,0
Epifitotiology	1	3,0
Pesticides toxicology	2	3,0
Seed pathology of agricultural crops	2	2,0
Agricultural rodentology	1	3,0
Insects quantity management	2	5,0
Pathogens biology and management of the development of plant diseases	2	5,0
Methods of tests of the ways of plant protection	2	5,0
Total		**39,0**
Disciplines course chosen by the university	3	**12,0**
Disciplines course chosen by students	3	**9,0**
State attestation		
Practice	1,2	12,0
Preparation and defence of master's paper	3	12,0
Total		**24,0**
Total		**90,0**

INDUSTRY-ORIENTED SPECIALIZATION

Master programme

PHYTOMEDICINE

Methods of mycological and phytopathological researches, pathogens identification, study of their biological and ecological qualities, interrelations with plants and control of the development of diseases caused by them.

Disciplines course chosen by the university	**Semester**	**Credits**
Methods of identification of crops pathogenic agents	3	3,0
Pathogens plant ecology	3	3,0
Diagnostics of plant diseases	3	3,0
Mycological and phytopathological methods of experimental researches	3	3,0
Total		**12,0**
Disciplines course chosen by students		
Molecular bases of interrelations between plants and pathogenic organisms	3	3,0
Plant bacteriosis	3	3,0
Use of antagonistic organisms against disease pathogenic agents	3	3,0
Total		**9,0**

Proposed topics for master's papers :

1. Peculiarities of pathogens development and measures concerning their development restriction under condition of research region
2. Currants flour dew.
3. Peculiarities of the development of sugar beet cercosporosis under condition of research region.

Master programme

Phytosanitary monitoring

Problems of Currant phytosanitary monitoring, finding and calculation of crop pathogenic agents. Substantiated current system of observation of crops development and reproduction is done. Main measures concerning decision making in plant protection organization and optimization to increase their productivity and products quality.

Disciplines course chosen by the university	**Semester**	**Credits**
Entomological methods of experimental researches	3	5,0
Pathology of insects	3	3,0
Ecology of insects	3	4,0
Total		12,0
Disciplines course chosen by students		
Theoretical principles of technical entomology	3	3,0
Etiology of insects	3	2,0
Biocenology of insects	3	2,0
Physiology of insects	3	2,0
Total		9,0

Proposed topics for master's papers:

1. Phytosanitary monitoring of grain crops of internal stem vermin population under condition of research region.
2. Phytosanitary monitoring of vegetables on insects population in Polisssia and Forest-steppe of Ukraine.
3. Phytosanitary monitoring of fruit plantations on codling moth and leaf-eating insects' population under condition of research region.

Master programme

PLANT QUARANTINE

Master students study phytosanitary laws of EUPP and WTO, the law of Ukraine “About plant quarantine”; phytosanitary control of objects of regulation on the state border and in Ukraine to prevent quarantine organisms from penetration into the country; conducting careful phytosanitary expertise, analysis of phytosanitary risks of pathogen agents as regards its acclimatization within Ukraine, and potential and economic results in case of their penegration and measures of their localization and liquidation.

Disciplines course chosen by the university	**Semester**	**Credits**
International phytosanitary standards	3	6,0
Adventive pathogen organisms	3	6,0
Total		**12,0**
Disciplines course chosen by students		
Geography of quarantine organisms	3	3,0
Pathogen organisms of Ukraine in International phytosanitary	3	3,0
Analysis of pathogen organisms risks	3	3,0
Total		**9,0**

Proposed topics for master’s papers :

1. Inspection of regulated objects (seeding material, grains and products of their processing), which come into Ukraine to reveal quarantine pathogen organisms.
2. Phytosanitary protection methods of fruit plantations from Californian coccids under condition of research region.
3. Peculiarities of inspection of potato plantations to reveal quarantine pathogen organisms (potato moth, golden potato nematode, potato cancer) and phytosanitary protection measures under condition of research region.

Master programme

Biological plant protection

Study of biological, morphological qualities of pathogen organisms which enables to reduce pesticide amount and to save ecologically safety products.

Disciplines course chosen by the university	**Semester**	**Credits**
Biological plant protection from diseases	3	6,0
Biological plant protection from vermin	3	6,0
Total		**12,0**
Disciplines course chosen by students		
Genetic methods in plant protection	3	3,0
Biotechnology of useful insects	3	3,0
Principles of biomethods	3	3,0
Total		**9,0**

Proposed topics for master's papers:

1. Peculiarities of development and use of entomophage in greenhouses, etc.
2. Peculiarities of influence of entomopathogenic fungi on spreading and development of bread bugs, Colorado bugs, etc..
3. The importance of use of biological preparations and their influence on the environment.

RESEARCH- ORIENTED SPECIALIZATION

Master programme

BIOLOGICAL SUBSTANTIATION OF CONTROL OF OBLIGATE AND NECROTROPHIC PLANT PATHOGENS

Study of diseases parhogenesis which are caused by obligate and optional pathogen agents, ways of revealing of selective material resistance factors.

Disciplines course chosen by the university	**Semester**	**Credits**
Actinomycene diseases	3	3,0
Pathologic process of root plant systems	3	3,0
Physiological and biochemical aspects of plant resistance to diseases	3	3,0
Mycotoxicology	3	3,0
Total		**12,0**
Disciplines course chosen by students		
Methods of creation of infectious surroundings in phytopathology	3	4,0
Plant diseases pathogenesis	3	5,0
Total		**9,0**

Proposed topics for master's papers :

1. Evaluation of legumes sorts resistance to obligate and necrotrophic pathogens.
2. Research of the influence of the biological preparations on the development of legumes diseases.
3. Forecast of plant diseases development caused by obligate and necrotrophic pathogens.
4. Research of the influence of plant protection measures on plant diseases development and quality of obtained products.

Master programme

INSECTS AMOUNT CONTROL IN AGROCENOSES OF CROPS

Control of insects-phytophages amount and substantiation of population dynamic forecast and directed regulation of their amount. Master students study theoretical principles of interaction of different mechanisms which influence the amount of insects-phytophages and use of different factors of their amount control.

Disciplines course chosen by the university	**Semester**	**Credits**
Useful insects in agrocenoses	3	3,0
Entomologic methods of experimental researches	3	3,0
Technical entomology	3	3,0
Ecology of insects-phytophages	3	3,0
Total		**12,0**
Disciplines course chosen by students		
Theoretical principles of amount regulation of crop vermin	3	3,0
Physiological methods of vermin amount regulation	3	3,0
Vermin epizootic	3	3,0
Total		**9,0**

Proposed topics for master's papers:

1. Peculiarities of development of sugescent vermin and regulation of their amount in Forest-steppe of Ukraine.
2. Biological peculiarities of sugar beets coleopterans and measures of their amount regulation under condition of research region..
3. Peculiarities of development of cabbage moths and regulation of their amount in Forest-steppe of Ukraine.

MASTER PROGRAMMES OF EDUCATIONAL AND SCIENTIFIC INSTITUTE OF LIVESTOCK RAISING AND WATER BIORESOURCES

Educational and scientific institute of livestock raising and water bioresources is involved in educational, research, innovative, methodical, production, information and extension and educative activities to obtain higher education, qualification and specialities in the direction “Zooengineering”, “Water bioresources” aimed at solution of current problems of science about life, development and extension of up-to-date resource-saving technologies.

Faculties which provide Master training:

Faculty of livestock products production and processing
Fish farming faculty

They organize and coordinate training of specialists who have qualification in current production technologies, livestock and fish products storage and pre-processing.

The Master training and education process at the institute of livestock raising and water bioresources envisages production and research specialization in all specialities. This enables graduates to work at agricultural enterprises which specialize in livestock and fish production or in scientific institutions which specialize in scientific problems in livestock raising, livestock selection and genetics, or continue their study at post graduate course. The Bachelors have the possibility to continue their study in specialities of the directions “Specific categories”, “Pedagogics of higher school”, “Quality, standardization and certification”, “Business administration” and in speciality “State service” of the direction “State administration”.

Centers of practical training SD of NULES ″Agronomy Research Station″; SD of NULES ″Velyka Snitynka TRF named after O.V. Muzychenko″; Kyiv hippodrome and university stable; Dibrivka, Oleksandria, Dnipropetrovs’k, Yagil’hets’ house plants; pedegree associations and selection centres of Ukraine: SSE „Main selection centre of Ukraine”, RSP corporation „Selection”; „Agro-soiuz”, „Chumaky”; „Suziria”; „Pedigree plant „Bortnichi”; „Askania-Nova” in Kherson region; institute of animal breeding and genetics of UAAS; institute of Agroecology and biotechnology of UAAS”; “Poultry factory „Kyivs’ka”; Institute of poultry raising of UAAS; Golosievs’ka scientific and research apiary; „Kyivrybgosp”; institute of hydrobiology of NAS of Ukraine;

institute „Ukrrybproekt"; „Khmel'nyts'krybgosp"; „Poltavarybgosp"; fish farming „Nyvka" of UAAS; Institute of fish farming of UAAS.

The faculty cooperates with leading foreign higher institutions of Europe and the USA: World livestock association, European livestock association, Lithuanian veterinary academy, European cynology association (Belgium), Moscow agricultural academy named after K. A. Temeriazev (Russia), Institute of meat cattle (Russia), Institute of livestock raising (Buelorussia), Astrakhan' state technical university (Russia), Institute of beekeeping (t. Rybne, Riazan' region, Russia), Institute of beekeeping of Austria, Agrarian university (Slovakia, Nitra), institute of information of Pekin academy of agricultural and forest sciences (China), international federation in beekeeping („Apimondia"), International association of beekeeping researchers (Great Britain), All-Russian scientific and research institute of horse raising (Russia), Ghent university (Belgium), Humboldt university in Berlin (Germany), Iowa and Louisiana state universities (USA).

Specialities:
8.130201 – „Technology of livestock products production and processing ";
8.130301 – „Water bioresources".

Qualification of Master graduates according to the state classificator of professions of Ukraine:

In speciality 8.130201 „ Technology of livestock products production and processing *"* 2211.1 – specialist in genetics, 2211.2 – expert in cynology, 2213.1 – junior scientific researcher, 2213.1 – scientific officer, 2213.2 – zoo technician, 2213.2 – zoo technician in quality product control, 2213.2 – zoo technician in breeding, 2213.2 – technician-researcher in livestock products production and processing;

In speciality 8.130301 „ Water bioresources *"* 2211.1 – ichthyologist-researcher, 2211.1 – fish breeder-researcher, 2213.1 – researcher in aquaculture, 3112 – technician-fish breeder, 3212 – technologist in aquaculture products production, 3212 – technologist – fish breeder, 3212 – expert in ichthyology and fish culture, 2211.2 – professional in ichthyology and fish culture, 3119 – technician in industrial fishing, 2213.2 – specialist in aquaculture products production.

Master graduates can be employed at agricultural enterprises of different forms of ownership, state quarantine service, scientific and research institutions of NAS of Ukraine and UAAS, national parks and reserves, regional and district agricultural authorities, leading agro industrial enterprises and fishing farms, etc.

SPECIALITY
8.130201 „TECHNOLOGY OF LIVESTOCK PRODUCTS PRODUCTION AND PROCESSING”

Master programme of industry-oriented specialization

Livestock genetic resources ***Horse breeding and stud-farms*** ***Beekeeping***	TSC of animal genetics and selection (educational building №1, room №80, tel. 527-82-30) Coordinator – M. I. Sakhsts'kyi, doctor of biological sciences, professor, academician tel.: 527-82-30
Dairy cattle ***Meat cattle***	ITSC of dairy and meat cattle (educational building №7, room №41, tel. 527-82-32) Coordinator – A. M. Ugnivenko, doctor of agricultural sciences, professor tel.: 527-82-32
Pork products production and processing ***Sheep and goat products production and processing*** ***Wild animal industry***	ITSC of pig and sheep raising (educational building №7^{A}, room №201, tel. 527-85-32) Coordinator – Yu. V. Zasukha, doctor of agricultural sciences, professor tel. 527-85-32
Poultry industry ***Animal feeding***	ITSC of technologies in poultry industry, their standardization and certification ((educational building №7^{A}, room №201, tel. 527-88-49) Coordinator – V. P. Borodai, doctor of agricultural sciences, professor tel. 527-88-49

Master programme of research- oriented specialization

Animal breeding and selection ***Animal genetics*** ***Biotechnology***	TSC of animal genetics and selection (educational building №1, room №80, tel. 527-82-30) Coordinator – M. I. Sakhsts'kyi, doctor of biological sciences, professor, academician tel.: 527-82-30
Animal feeding and fodder technology ***Animal hygiene and veterinary sanitation***	ITSC of technologies in poultry industry, their standardization and certification (educational building №7^{A}, room №201, tel. 527-88-49) Coordinator – V. P. Borodai, doctor of agricultural sciences, professor tel. 527-88-49
Livestock products technology	ITSC of dairy and meat cattle (educational building №7, room №41, tel. 527-82-32) Coordinator – A. M. Ugnivenko, doctor of agricultural sciences, professor tel.: 527-82-32

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines course according to the requirements of MES		
Information technology	2	2,0
Macro- and microeconomics	3	2,0
Personnel management	3	2,0
Biology of productivity of live-stock	2	3,0
Modeling of technological processes in stock-raising	1	3,0
Technology of meat and meat products	2	3,0
Labour protection in stock-raising	1	2,0
Organization of agrarian business	2	2,0
The civil defense	2	2,0
Technology of fodder and fodder additions	3	3,0
Selection of live-stock	2	3,0
Specialized meat cattle	3	3,0
Technology of production of milk and dairy products	3	3,0
Modern methods of research in stock-raising	3	3,0
Total		**36,0**
Disciplines course chosen by the university	1	**3,0**
Disciplines course chosen by students	1,2,3	**15,0**
State attestation		
Practice	1,2	14,0
Preparation and defence of master's paper	3	15,0
Total		**29,0**
Total		**90,0**

INDUSTRY-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
Population genetics	1	3,0
Animal nutrition	1	3,0
Physiology of lactation	1	3,0
Pig biology	1	3,0
Poultry biology	1	3,0
Honey bee biology	1	3,0
Total		3,0

Master programme

LIVESTOCK GENETIC RESOURCES

The main task of master programme is to train specialists in pedigree in livestock who are able to work at agency of animal identification of Ministry of agricultural policy of Ukraine or its regional branches, main state pedigree inspection of Ministry of agricultural policy of Ukraine or its regional branches, at scientific and research institutions, on pedigree farms.

Disciplines course chosen by students	Semester	Credits
Special genetics	2	2,0
Livestock genetic resources	2	3,0
Information systems in selection	2	2,0
Special selection in livestock	2	3,0
Pedigree organization in livestock	2	2,0
Biotechnology of animal reproduction	2	3,0
Total		15,0

Proposed topics for master's papers:

1. Evaluation of methods of increase of bull sperm productivity in different ways of exploitation.
2. DNA-technologies of evaluation of animal pedigree value and origin.
3. Biostimulators of cows' reproduction function.
4. Management of genetic resources in dairy cattle.

Master programme

HORSE BREEDING AND STUD-FARMS

A specialist should have necessary scientific, practical and organizational abilities to work at state and private pedigree entities, zone scientific and research institutes and stations, hippodromes and horse sports centres, tourist centres and medical centres.

Disciplines course chosen by students	Semester	Credits
Horse breeds	1	2,0
Hippodrome and sport training in horse breeding	2	3,0
Horse reproduction	2	2,0
World genetic resources in horse breeding	3	3,0
Pedigree organization in horse breeding	3	2,0
Stud-farms	3	3,0
Total		15,0

Proposed topics for master's papers :

1. Horse evaluation according to polymorphic systems of blood groups.
2. Horse use in classical types of equestrian sport.
3. Efficiency of use pedigree horse resources of plant breeds of Ukraine.
4. System of horse choice and use for hypnosis therapy.

Master programme

BEEKEEPING

The programme envisages obtaining of knowledge in biology of bee colony and its members, mellific resources, methods of mechanization of production processes and equipment, technologies of keeping and reproduction of bee families, pollination of entomophilic plants, bee diseases, organization of production, processing and evaluation of products quality, economy and organization of beekeeping.

Disciplines course chosen by students	Semester	Credits
Technological equipment in beekeeping	2	2,0
Bee raising and keeping	2	3,0
Mellific resources and pollination of plants	2	2,0
Production, storage and processing of bee products	2	3,0
Management and marketing in beekeeping	2	2,0
Bee pathology	2	3,0
Total		**15,0**

Proposed topics for master's papers:

1. Evaluation of bee queens productivity.
2. Genetic control of bee origin according to DNA tests.
3. Improvement of technologies of propolis obtaining and bee raw material.
4. Development of methods of bumblebee raising and use.

Master programme

DAIRY CATTLE

The programme studies the peculiarities of lactation physiology, system of keeping dairy cattle, peculiarities of high-productive cows feeding, technological equipment of dairy enterprises and intensive technologies of cattle calves raising, principles of management and marketing in dairy cattle and management of milk productivity of cows.

Disciplines course chosen by students	Semester	Credits
Systems of cattle milk breeds keeping	2	2,0
high-productive cows feeding	2	3,0
Technological equipment of milk enterprises	2	2,0
Intensive technologies of cattle calves raising	2	3,0
Management and marketing in dairy cattle	2	2,0
Management of milk productivity	2	3,0
Total		**15,0**

Proposed topics for master's papers:

1. Improvement of elements of industrial technologies of milk production.
2. Peculiarities of formation of fodder mixtures and their application in animal feeding.
3. Application of biological and active substances to improve cows reproduction function.

Master programme

MEAT CATTLE

The programme studies the biology of cattle of meat breeds, their keeping systems, animal productivity stimulators, feeding, slaughter and processing of meat cattle, the peculiarities of ecologically safety beef production and management of cattle meat productivity.

Disciplines course chosen by students	Semester	Credits
Feeding cattle systems	2	2,0
Cow productivity stimulators	2	3,0
Feeding of meat breed cattle	2	2,0
Slaughter and processing of meat cattle	2	3,0
Ecologically safety beef production	2	2,0
Management of cattle meat productivity	2	3,0
Total		**15,0**

Proposed topics for master's papers :

1. Bioenergetic evaluation of beef production technologies.
2. Use of heifers according to the meat cattle technology.
3. Evaluation of beef quality obtained at enterprises of different forms of ownership.

Master programme

PORK PRODUCTS PRODUCTION AND PROCESSING

The programme studies the peculiarities of organization and functions of pig organs and organism systems. Theoretical principles of pigs selection. Selection tasks in view of branch intensification. Planning and development of technologies of pork products production and processing. Advanced technologies of pork processing into competitive products. Animals slaughter and carcass processing. Packaging of finished products. Harmonization of standards and certification of meat and its products according to WTO and EU requirements. Formation of finished products markets. Support of competitive technologies of pork production and processing.

Disciplines course chosen by students	**Semester**	**Credits**
Technological equipment of pig farms	2	2,0
Pig reproduction and raising	2	3,0
Pig slaughter and pork processing	2	2,0
Industrial technologies of pork production	3	5,0
management and marketing in pig raising	3	3,0
Total		**15,0**

Proposed topics for master's papers:

1. Influence of biological and active additions on reproduction function of sow and boar sperm quality.
2. Evaluation of product quality of pig slaughter according to different technologies.

Master programme

SHEEP AND GOAT PRODUCTS PRODUCTION AND PROCESSING

The programme studies the peculiarities of organization and functions of sheep and goats organs and organism systems. Selection tasks in view of branch intensification. Biotechnology of herd reproduction and raising of young animals. Planning and development of technologies of sheep and goat products production and processing. Wool, astrakhan, sheepskin as raw material for processing industry. Biological and nutritive value of lamb sheep milk. Harmonization of standards and certification of meat and its products according to WTO and EU requirements. Formation of finished products markets. Support of competitive technologies of sheep and goat production and processing. Structural scheme of formation of competitive production and processing of sheep and goat products in Ukraine.

Disciplines course chosen by students	**Semester**	**Credits**
Technological equipment in sheep and goat raising	2	2,0
Sheep and goat reproduction and raising	2	3,0
Sheep and goat slaughter and pork processing	2	2,0
Industrial technologies of sheep and goat production	3	5,0
Management and marketing in sheep and goat raising	3	3,0
Total		**15,0**

Proposed topics for master's papers:

1. Improvement of sheep raising products production technologies.
2. Use of industrial crossing to receive lamb and mutton.
3. Evaluation of products quality of sheep slaughter and wool.
4. Biotechnology of herd reproduction and raising healthy young animals.
5. Pre-processing and deep processing of wool, sheepskin, astrakhan, meat and milk.
6. Formation of competitive production and sheep and goat products market.
7. Feeding and keeping of sheep of wool, forest, dairy and mixed directions of productivity.

Master programme

Wild Animal Industry

The programme studies the biological peculiarities of fur animals as representatives of proper taxons of zoological system. Processes of nutrition, metabolism, reproduction and molting.

Peculiarities of pedigree work in wild animal industry. Wild animals reproduction and keeping in cages. Special wild animal industry: mink raising, fox raising, nutria raising, raccoon-like dogs. Technological decisions and ways of production and processing of wild animals products under market relations formation. Peculiarities of projecting of technological process. Current fur animals keeping systems. Fur pre-processing. Advanced technologies of further fur-skin treatment suitable to fur realization by processing enterprises or to export.

Disciplines course chosen by students	**Semester**	**Credits**
Fur animals and rabbits reproduction	2	2,0
Fur animals and rabbits keeping	2	3,0
Fur animals and rabbits feeding	2	2,0
World technologies in wild animal industry and rabbit raising	3	5,0
management and marketing in wild animal industry and rabbit raising	3	3,0
Total		**15,0**

Proposed topics for master's papers:

1. Evaluation of meat qualities of rabbits of different breeds.
2. Productive rabbit qualities depending on female rabbit fecundity
3. Quality of fur animals fells depending on feeding factors.
4. Formation of fur animals fells coloration.

Master programme

POULTRY INDUSTRY

The master programme studies the peculiarities of organization and functions of birds organs and organism systems; peculiarities of pedigree work with birds of different species, current technologies of food eggs production, meat of broiler chicken, turkey**,** waterfowl, quails, pheasants, ostriches and pigeons; marketing systems in poultry industry.

Disciplines course chosen by students	Semester	Credits
Eggs incubation with embryology bases	2	2,0
Food eggs production	2	3,0
Poultry feeding	2	2,0
Poultry meat production	2	3,0
management and marketing in poultry industry	2	2,0
Pedigree in poultry industry	2	3,0
Total		**15,0**

Proposed topics for master's papers :

1. Improvement of incubation regime of eggs of meat crossed hens.
2. Research of lighting regimes of poultry farms in broiler chicken raising.
3. Comparative evaluation of egg-laying hens of different crossings.
4. Evaluation of ontogenetic development of African ostriches.

Master programme

ANIMALS FEEDING

The programme studies management of technological process of fodder stocking, preparation of combined fodder and fodder additions and ways of their effective use in feeding ruminant animals. Main points of planning of experiment in animal feeding, systematization and analysis of scientific information and research results.

Disciplines course chosen by students	Semester	Credits
Planning of experiment	2	2,0
Feeding of ruminant animals	2	5,0
Feeding of monogastric animals	3	8,0
Total		**15,0**

Proposed topics for master's papers :

1. Feeding analysis and ways of its improvement (for animals of different kinds sex and age groups).
2. Elaboration of feeding programme for different kinds of animals.
3. Calculation of need in fodder for different kinds of agricultural animals.

RESEARCH- ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
Etiology of animals	1	3,0
Total		**3,0**

Master programme

ANIMAL BREEDING AND SELECTION

The programme studies the methods of determination of animal productivity and pedigree value, forecast of productivity and combination ability of some animals or their specialized lines, use of inbreeding in selection, methods of improvement and formation of populations of lines and animal breeds, gene fund preservation, elaboration of programmes of herds selection.

Disciplines course chosen by students	Semester	Credits
Current methods of genetic researches	2	2,0
Population and special genetics	2	3,0
Biology of animal reproduction	2	2,0
Animal breeding and selection	3	6,0
Organization in pedigree in livestock	3	2,0
Total		**15,0**

Proposed topics for master's papers:

1. Evaluation of insemination ability of bulls' sperm.
2. Line evaluation of cows' appearance.
3. Influence of creation technology of biologically active preparation on cow insemination.

Master programme

GENETICS OF ANIMALS

The programme studies current methods of genetic researches to apply in animal selection: cytogenic animal analysis, molecular and genetic animal analysis according to the genes analysis of economic and useful qualities, identification of paternity and study of inherited stipulated animal anomalies.

Disciplines course chosen by students	Semester	Credits
Current methods of genetic researches	2	2,0
Agricultural animals ontogenesis	2	3,0
Special and population genetics	2,3	5,0
Quality, standardization and certification of livestock products	3	5,0
Total		**15,0**

Proposed topics for master's papers :

1. Genetic expertise of genealogical origin of ancestors of lines and families.
2. Inbreeding differentiation according to the genes analysis of economic and useful qualities of different kinds of agricultural animals.
3. Genetic and statistical parameters of Holstein cows with high productivity.
4. Molecular and genetic analysis of resistance to infectious diseases of different kinds of animals.
5. Cytogenic pedigree animal analysis.

Master programme

BIOTECHNOLOGY

The programme studies biotechnological methods of animal reproduction, hormone regulation of sex maturity and reproductive function of males and females, evaluation of vital capacity of zygotes and their transplantation to accelerate the reproduction of highly productive animals.

Disciplines course chosen by students	Semester	Credits
Planning of experiment	2	2,0
Agricultural animals ontogenesis	2	3,0
Management of technological process of livestock products production	2,3	5,0
Quality, standardization and certification of livestock products	3	5,0
Total		**15,0**

Proposed topics for master's papers:

1. Influence of technologies of creation of biologically active preparation on cows insemination.
2. Cows insemination dependence on methods of injecting of biologically active preparation.
3. Efficiency of different schemes of stimulation of cows reproduction functions by biologically active preparations.
4. Some aspects of sows reproduction function after injecting of glutam– M1.

Master programme

ANIMAL FEEDING AND FODDER TECHNOLOGY

The programme studies qualities of fodder nutrition, their processing into livestock products, control of animal feeding value, methods of doing scientific researches in animal feeding.

Students study problems of production and processing of biologically safety livestock products of high quality.

Disciplines course chosen by students	**Semester**	**Credits**
Scientific researches in animal feeding	2	2,0
Physiology of digestion	2	3,0
Fodder evaluation	2,3	5,0
Animal nutrition	3	5,0
Total		**15,0**

Proposed topics for master's papers:

1. Optimization of feeding of animals of proper type, sex and age or production group under different conditions (economic, variants of technological processes, economic indices in the branch, etc).
2. Efficiency of fodder use in feeding of animals of proper type, sex and age or production group.
3. Comparative characteristic of different methods of fodder quality evaluation, identification of animal need in energy and nutrients.
4. Digestion of fodder nutrients and animal productivity according to various factors.

Master programme

HYGIENE OF ANIMALS AND VETERINARY SANITATION

The programme trains specialists in the sphere of development, extension of new systems and ways of animals keeping into production, methods of control of physical, chemical and biological environment factors, approbation and sanitary and hygienic evaluation of new fodder, fodder additions, technology equipment, ways of animal care and study of their behavior.

Disciplines course chosen by students	**Semester**	**Credits**
Planning of experiment	2	2,0
Agricultural animals ontogenesis	2	3,0
Keeping systems	2,3	5,0
Livestock waste and their processing	3	5,0
Total		**15,0**

Proposed topics for master's papers:

1. Hygienic evaluation of chelate microelements combinations in broiler-chickens raising.
2. Hygienic substantiation of biologically active addition vitatone application as the source of β-carotene in cow's milk production.
3. Hygienic evaluation of efficiency of microbe β-carotene application to stimulate pigs' reproduction function.

Master programme

TECHNOLOGY OF LIVESTOCK PRODUCTS PRODUCTION

The programme envisages the entrance to post graduate course in speciality 06.02.04. – technology of livestock products production. It envisages the study of peculiarities of realization of inherited production qualities, reproduction and ontogenesis of agricultural animals to substantiate, improve and project technological processes of livestock products, development of methods of agricultural animals keeping and caring, animal feeding systems, young animals raising.

Disciplines course chosen by students	**Semester**	**Credits**
Planning of experiment	2	2,0
Agricultural animals ontogenesis	2	3,0
Management of technological process of livestock products production	2,3	5,0
Quality, standardization and certification of livestock products	3	5,0
Total		**15,0**

Proposed topics for master's papers:

1. Influence of durability of cows dry period on colostrum contents and young animal growth and their first month of life.
2. Evaluation of productivity of pigs of different breeds.
3. Influence of feeding factors on female rabbits reproduction ability.
4. Bee flying activity and pollination of field cultures under condition of polyflower pollen honey croppage.
5. Resistance of different breeds of bees to environment conditions.
6. Life capacity of working bees depending on additional feeding of bee families.
7. Evaluation of egg productivity of egg laying hens kept in cell cages.
8. Influence of density on meat qualities of broiler-chickens.
9. Appearance and complexion features and productive qualities of geese depending on their age.

SPECIALITY
8.130301 „WATER BIORESOURCES”

Master programme of industry-oriented specialization

Pond fish farming	TSC of water bioresources (educational building №1, room №32, tel. 527-86-83)
Sturgeon farming	
Decorative aquaculture	Coordinator – N. I. Vovk, doctor of agricultural sciences, professor tel.: 527-86-83
Protection of hydro bioresources	

Master programme of research- oriented specialization

Selection of fish farming objects	TSC of water bioresources (educational building №1, room №32, tel. 527-86-83)
Ichthyofauna of water reservoirs of complex purpose	Coordinator – N. I. Vovk, doctor of agricultural sciences, professor
Biomonitoring of water reservoirs of fishery purpose	tel.: 527-86-83Тел.: 527-86-83

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Business foreign language	1	1,5
Total	1	**7,0**
Compulsory disciplines course according to the requirements of MES		
Psychology of labour relations in fish-farming collectives	2	2,0
Civil defense in fish-farming	2	2,0
Acclimatization of hydrobionts	2	3,0
Theoretical principles of fish-farming	1	4,0
Methods of fish-farming researches	2	4,0
Theory of dynamics of population of fish	2	3,0
Principles of evolution theory of hydrobionts	2	3,0
Intensive technologies in aquaculture	2	5,0
Ecological physiology and biochemistry of hydrobionts	2	4,0
Financial activity of fishery enterprises	2	3,0
Modeling of technological processes in fish-farming	3	4,0
Labour protection in fish-farming	1	2,0
Organization of business in fish-farming	2	2,0
World fish farming	2	2,0
Total		**43,0**
Disciplines course chosen by the university	3	**14,0**
Disciplines course chosen by students	3	**6,0**
State attestation		
Practice	1,2	10,0
Preparation and defence of master's paper	3	10,0
Total		**20,0**
Total		**90,0**

INDUSTRY-ORIENTED SPECIALIZATION

Master programme

POND FISH FARMING

Master programme trains specialists in pond fish farming to work in specialized fish nurseries, fishing enterprises of pond type of different forms of ownership, scientific and research institutions which research the problems of improvement of pond fish farming technology, in Ministry of agricultural policy and state committee of fishery of Ukraine.

Disciplines course chosen by the university	**Semester**	**Credits**
Biology of pond fish productivity	3	5,0
Current technologies of pond fish farming	3	5,0
Selection of pond fish	3	4,0
Total		**14,0**
Disciplines course chosen by students		
Current technologies of cultivation of non-traditional objects of pond fish farming	3	6,0
Industrial technology of carp farming	3	6,0
Total		**6,0**

Proposed topics for master's papers:

1. Fish and biological substantiation to the project of full system fish farm of pond type for growing sturgeon (Acipenser baery Brandt).
2. Fish and biological substantiation and technological calculation to the project of full system fish farm of pond type with capacity of 800 tons of carps.

Master programme

STURGEON FARMING

Master programmes trains specialists in sturgeon farming to work at sturgeon fish plants, specialized commodity sturgeon fish farms of different types, at scientific research institutions which deal with problems of preservation of populations and formation of industrial sturgeon resources in natural water reservoirs, state committee of fishery of Ukraine.

Disciplines course chosen by the university	**Semester**	**Credits**
Biotechnology of sturgeon farming	3	5,0
Selection of sturgeon farming objects	3	5,0
Biology of sturgeon productivity	3	4,0
Total		**14,0**
Disciplines course chosen by students		
Pond sturgeon farming	3	6,0
Industrial technologies of sturgeon farming	3	6,0
Total		**6,0**

Proposed topics for master's papers :

1. Principles of reproduction technology of Volga stellated surgeon (Acipenser stellatus Brandt) at Kizan' SFP of Pivnichkasprybvod og RF and modeling of main technological processes.
2. Peculiarities and methodic approaches to the formation of domestic schools of Russian sturgeon (Acipenser guldenstadty Brandt) at sturgeon fish plant.

Master programme

DECORATIVE AQUACULTURE

Master programmes trains specialists in speciality „Water bioresources" in decorative aquaculture. Students should obtain knowledge in origin, biology, keeping, growing and treatment of decorative fish; creation of artificial decorative aqua systems; project and aqua design of open and closed aqua systems; cultivation and selection of the most valuable objects applying current technologies for decorative aqua systems.

Disciplines course chosen by the university	**Semester**	**Credits**
Current technologies of decorative aqua culture	3	5,0
Decorative aqua culture objects health	3	5,0
Decorative aqua culture cultivation	3	4,0
Total		**14,0**
Disciplines course chosen by students		
Principles of aqua design	3	6,0
Construction and project of decorative aqua systems	3	6,0
Total		**6,0**

Proposed topics for master's papers:

1. Project and aqua design of decorative fresh water aqua system of biotope of South America.
2. Improvement of technology of keeping and growing of Ciclidae fish.

Master programme

PROTECTION OF HYDRO BIORESOURCES

Master programmes trains specialists in environment protection who are able to work at Ministry of environment protection or state committee of fishery of Ukraine, in regional and district fish protection bodies, in scientific research institutions, at state or private enterprises which deal with growing, protection and reproduction of rare and extinct fish.

Disciplines course chosen by the university	**Semester**	**Credits**
Protection of hydrobionts	3	5,0
Management of hydrobiont use	3	5,0
International regulation of fishing	3	4,0
Total		**14,0**
Disciplines course chosen by students		
Aborigine ichthyofauna	3	6,0
Special use of water live resources	3	6,0
Total		**6,0**

Proposed topics for master's papers:

1. Methods of increase of bioproductive potential of fishing water reservoirs.
2. Forecast of water reservoirs bioproductivity depending on water environment abiotic factors activity.
3. Calculation of potential of fish productivity of different types of water reservoirs depending on the development of phyto plankton, zooplankton in them.
4. Evaluation of physiological fish state under the influence of natural and anthropogenic factors.
5. Elaboration and realization of measures aimed at preservation of biodiversity, rare and extinct hydroecot types, intensification of natural renewal of aborigine ichthyofauna, industry valuable fish types and their re-climatization in water reservoirs of Ukraine.
6. Technology of renewal of industrial ichthyofauna and productive ichthyocomplexes of aborigine fish types of natural fishery water reservoirs under intensive anthropogenic capacity.

RESEARCH- ORIENTED SPECIALIZATION

Master programme

SELECTION OF FISH FARMING OBJECTS

Master programmes trains specialists in selection and pedigree in fishing farming to work at scientific research institutions which deal with problems of aquaculture objects selection, in Ministry of agricultural policy and state committee of fishery of Ukraine which manage and control selective and pedigree measures in fishing farming, specialized pedigree farms and fishing enterprises of pond type of different forms of ownership.

Disciplines course chosen by the university	**Semester**	**Credits**
Current selection methods in aqua culture	3	5,0
Research methods in fish selection	3	5,0
Biology of fish farming objects productivity	3	4,0
Total		**14,0**
Disciplines course chosen by students		
Selection of fish farming objects	3	6,0
Gene and molecular methods	3	6,0
Total		**6,0**

Proposed topics for master's papers:

1. Formation of uterine schools of spoon-billed cat (Polyodon spathula Valb.) at full system pond fishery enterprise.
2. Methods of selection and pedigree work with iridescent trout (Oncorhinchus mykiss) at enterprises pedigree-subjects.
3. Efficiency of the applying of synthetic stimulators inoculation of gametes in the process of artificial reproduction of white silver carp (Hypophtalmichthys molitrix).

Master programme

ICHTHYOFAUNA OF WATER RESERVOIRS OF COMPLEX PURPOSE

Master programmes trains specialists in ichthyology who are able to work at state committee of fishery of Ukraine, state fish inspection, its regional and district structures, at scientific research institutions, at other state and private enterprises which deal with the problems of fish growing and catching in fishery water reservoirs.

Disciplines course chosen by the university	**Semester**	**Credits**
Ichthyology of water reservoirs of Ukraine	3	5,0
Ichthyocenology	3	5,0
Current methods of ichthyologic researches	3	4,0
Total		**14,0**
Disciplines course chosen by students		
Fish catching forecast	3	6,0
Fish systematization and phylogeny	3	6,0
Total		**6,0**

Proposed topics for master's papers:

1. Current state of ichthyofauna of fishery water reservoirs of complex purpose and the ways of increase of their fish productivity.
2. Influence of abiotic and anthropogenic factors on the formation of ichthyofauna of fishery water reservoirs of complex purpose.

Master programme

BIOMONITORING OF WATER RESERVOIRS OF FISHERY PURPOSE

Master programmes trains specialists in hydroecology who are able to work at Ministry of environment protection, state committee of fishery of Ukraine, state committee of hydrometeorology, state committee of water industry, at scientific research institutions, at state and private enterprises which deal with the problems of water quality control and water ecosystems of water reservoirs of complex and fishery purpose, evaluation and forecast of bio- and fish productivity of water reservoirs under the influence of natural and anthropogenic factors, and development and realization of water quality management.

Disciplines course chosen by the university	**Semester**	**Credits**
Water reservoirs bioproductivity	3	5,0
Hydrobiocenology	3	5,0
Current methods of hydrobiological researchers	3	4,0
Total		**14,0**
Disciplines course chosen by students		
Management of water quality and water reservoirs bioproductivity	3	6,0
Biomonitoring of water reservoirs of fishery purpose	3	6,0
Total		**6,0**

Proposed topics for master's papers:

1. Structural and functional characteristics of plankton, benthos organisms and macrophytes under ecological conditions water surrounding changes.
2. Application of plankton organisms in biomonitoring system of water reservoirs of different types.
3. Application of benthos organisms in the evaluation system of ecological condition of water reservoirs.
4. Evaluation of water quality and ecological water reservoirs according to the indices of fish physiological status.
5. Application of biomarkers in biomonitoring system of water reservoirs of different types.
6. Evaluation of bioproductive potential and water quality of water reservoirs of fishery purpose.

MASTER PROGRAMMES OF EDUCATIONAL AND SCIENTIFIC INSTITUTE OF VETERINARY MEDICINE AND LIVESTOCK PRODUCTS QUALITY AND SAFETY

Educational and scientific institute of veterinary medicine and livestock products quality and safety WAS CREATED by the rector's order №284 in June, 29, 2001 „About establishment of NAU structure"; it is involved in educational, research, innovative, methodical, production, information and extension and educative activities to obtain higher education, qualification and specialities in the direction „ veterinary medicine", aimed at the solution of current problems of veterinary medicine in cattle breeding, pig raising, sheep farming, poultry industry, treatment of small domestic animals and veterinary and sanitary expertise of livestock products, veterinary pharmacy, laboratory diagnostics, etc.

Faculty which provides Master training:

Faculty of veterinary medicine

was created in 1920 on the base of Kyiv polytechnic institute. Now the faculties includes 13 departments with training, research, training and research and production laboratories. Related departments are united into two training and scientific centres (TSC): TSC of veterinary medicine of productive animals and ITSC of animal biology and laboratory diagnostics of livestock products quality and safety. The faculty trains students in EQL „Bachelor", „Master", candidates and doctors of sciences in all scientific specialities in veterinary medicine. 30 doctors of sciences, professors, 7 academicians and correspondent members of HAS and UAAS, 94 candidates of sciences work at the faculty. Among the graduates of faculty are Heroes of Ukraine: academician D. O. Mel'nychuk and N\M. F. Gulii, M. S. Vasyl'chenko, director of agrofirm "Maiak" of Cherkasy region, S. I. Stasenko, Hero of socialist labour and others.

The faculty has been the member of European association of educational veterinary establishments (EAEVE) since 1992.

The Master training and education process at the institute of veterinary medicine and livestock products quality and safety envisages production and research specialization in speciality “Veterinary medicine”. This enables graduates to work in different branches of veterinary medicine or in scientific institutions which specialize in scientific problems in veterinary, or continue their study at post graduate course. The Bachelors have the possibility to continue their study in specialities of the directions “Specific categories”, “Pedagogics of higher school”, “Quality, standardization and certification”, “Business administration” and in speciality “State service” of the direction “State administration”.

Centers of practical training SD of NULES ″Agronomy Research Station″; SD of NULES ″Velyka Snitynka TRF named after O.V. Muzychenko″; TRF SD Nemishaevo agrotechnical college; TM „Nasha riaba" (Myronivka khlibproduct), TM „Morozivs’ki kurchata" (Ruby Rose); scientific laboratories of Ukraine: Ukrainian laboratory of AIC products quality and safety, State laboratory of veterinary medicine (Kyiv), SRI of laboratory diagnostics and veterinary and sanitary expertise, veterinary medicine clinics: training and scientific and production clinic of NULUS of Ukraine, veterinary medicine clinic (Kyiv), veterinary clinic of Kyiv zoo, private Kyiv clinics.

The faculty cooperates with leading foreign higher institutions and laboratories of Europe and the USA: SCP Veterinaire BOCAVET (France), Auburn University (Alabama, USA).

Every year students of the faculty have practical training on the farms of German peasant union, Karls Hoff (Germany), Agroimpuls (Switzerland), IAAS (Switzerland), CIMO (Finland, Holland).

Speciality:
8.130501 – „Veterinary medicine”.

Qualification of Master graduates according to the state classificator of professions of Ukraine:

In speciality 8.130501 „ Veterinary medicine”: 2223.2 – doctor of veterinary medicine, 2223.2 – doctor of veterinary medicine of meat processing enterprises, 2223.2 – official doctor of veterinary medicine, 2223.2 – doctor of veterinary medicine in treatment of sports horses.

Master graduates can be employed at agricultural enterprises of different forms of ownership, state veterinary medicine, private veterinary medicine clinics, etc on positions: doctor of veterinary medicine of agricultural economic entities in cattle breeding, pig raising, poultry industry; doctor of veterinary medicine in small animals clinic; doctor of veterinary medicine at agricultural enterprises and veterinary medicine institutions; doctor of veterinary medicine, pharmaceutist; official doctor of veterinary medicine; doctor of veterinary medicine, vetsanitary expert; doctor of veterinary medicine in sanitation and hygiene of livestock products processing enterprises; doctor of veterinary medicine, chemist-toxicologist, biochemist, microbiologist, virusologist, immunologist, radiobiologist, parasitologist, pathomorphologist; doctor of veterinary medicine at biotechnological enterprises; doctor of veterinary medicine, scientific officer, etc.

SPECIALITY
8.130501 „VETERINARY MEDICINE”

Master programme of industry-oriented specialization

Veterinary pharmacy	TSC of veterinary medicine of productive animals (educational building №12, room №114, block A, tel. 527-89-24) Coordinator – M. F. Pan'ko, candidate of veterinary sciences, associate professor. tel.: 527-80-29
Veterinary sanitary expertise of livestock products	TSC of veterinary medicine of productive animals (educational building №12, room №114, block A, tel. 527-89-24) Coordinator – O. M. Yakubchak, doctor of veterinary sciences, professor tel.: 527-88-41
Organization and management of veterinary service	TSC of veterinary medicine of productive animals (educational building №12, room №114, block A, tel. 527-89-24) Coordinator – B. V. Nedosekov, doctor of veterinary sciences, professor tel.: 527-89-22
Diseases prophylaxis and productive animals therapy	TSC of veterinary medicine of productive animals (educational building №12, room №114, block A, tel. 527-89-24) Coordinator – M. I. Tsvilikhovs'kyi, doctor of veterinary sciences, professor tel.: 527-83-60
Judicial veterinary medicine	ITSC of animal biology and laboratory diagnostics of livestock products quality and safety (educational building №12, room №113, block Д, tel. 527-88-64) Coordinator – B. V. Borysevych, doctor of veterinary sciences, professor tel.: 527-86-17

Ruminant diseases	TSC of veterinary medicine of productive animals (educational building №12, room №114, block A, tel. 527-89-24) Coordinator – V. YI. Liubets'kyi, doctor of veterinary sciences, professor tel.: 527-83-46
Horses diseases	TSC of veterinary medicine of productive animals (educational building №12, room №114, block A, tel. 527-89-24) Coordinator – K. V. Didash, candidate of veterinary sciences, associate professor tel: 527-87-85
Pigs diseases	TSC of veterinary medicine of productive animals (educational building №12, room №114, block A, tel. 527-89-24) Coordinator – B. V. Nedosekov, doctor of veterinary sciences, professor tel.: 527-89-22
Cats and dogs diseases	TSC of veterinary medicine of productive animals (educational building №12, room №114, block A, tel. 527-89-24) Coordinator– O. F. Petrenko, doctor of veterinary sciences, professor tel.: 527-88-68

Virusology in veterinary medicine	ITSC of animal biology and laboratory diagnostics of livestock products quality and safety (educational building №12, room №113, block Д, tel. 527-88-64) Coordinator – V. G. Skybits'kyi, doctor of veterinary sciences, professor tel.: 527-88-66
Laboratory diagnostics of small animals diseases	ITSC of animal biology and laboratory diagnostics of livestock products quality and safety (educational building №12, room №113, block Д, tel. 527-88-64) Coordinator – V. I. Karpovs'kyi, candidate of veterinary sciences, associate professor tel.: 527-83-44
Birds diseases	TSC of veterinary medicine of productive animals (educational building №12, room №114, block A, tel. 527-89-24) Coordinator – M. I. Tsvilikhovs'kyi, doctor of veterinary sciences, professor tel.: 527-83-60

Master programme of research- oriented specialization

Optimization of the system of anti tuberculosis measures in Ukraine	TSC of veterinary medicine of productive animals (educational building №12, room №114, block A, tel. 527-89-24) Coordinator – B. V. Nedosekov, doctor of veterinary sciences, professor tel.: 527-89-22
Scientific elaboration of correction of heavy metals contents in animals organisms and their elimination	MTSC of animal biology and laboratory diagnostics of livestock products quality and safety (educational building №12, room №113, block Д, tel. 527-88-64) Coordinator – N. M. Mel'nykova, candidate of biological sciences, professor tel.: 527-86-40

Physiology of animal higher nervous activity	MTSC of animal biology and laboratory diagnostics of livestock products quality and safety (educational building №12, room №113, block Д, tel. 527-88-64) Coordinator – V. I. Karpovs'kyi, candidate of veterinary sciences, associate professor tel.: 527-83-44
Risks analysis in production, processing, storage and transportation of livestock products	TSC of veterinary medicine of productive animals (educational building №12, room №114, block A, tel. 527-89-24) Coordinator – O. M. Yakubchak, doctor of veterinary sciences, professor tel.: 527-88-41
Distance diagnostics of animal clinic indicators	TSC of veterinary medicine of productive animals (educational building №12, room №114, block A, tel. 527-89-24) Coordinator – M. I. Tsvilikhovs'kyi, doctor of veterinary sciences, professor tel.: 527-83-60
Cattle ectoparasitory diseases	TSC of veterinary medicine of productive animals (educational building №12, room №114, block A, tel. 527-89-24) Coordinator – K. V. Didash, candidate of veterinary sciences, associate professor tel: 527-87-85

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Total		**5,5**
Compulsory disciplines course according to the requirements of MES		
Foreign language in professional activity	1	1,5
Methods of researcher	1	2,0
Pathophysiology	1	2,0
Comparative anatomy	1	2,0
Clinical pharmacology	1	2,0
Clinical biochemistry	1	2,0
Clinical diagnostics	1	2,0
Pathoanatomy and judicial Veterinary science	1	2,0
Management and marketing in veterinary medicine	2	2,0
Veterinary sanitary expertise with the principles of technology and standardization of livestock products	2	4,0
Noninfectious diseases of animals	2	6,0
Infectious diseases of animals	2	6,5
Total		**33,5**
Disciplines course chosen by the university	1	**3,0**
Disciplines course chosen by students	2	**9,0**
State attestation		
Practice	2	6,0
Preparation and defence of master's paper	2	3,0
Total		**9,0**
Total		**60,0**

INDUSTRY-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
System of quality support and information technologies in veterinary medicine	1	1,0
Law in veterinary medicine (WTO, EU)	1	1,0
Veterinary service and organization of private veterinary practice	1	1,0
Total		**3,0**

Master programme

VETERINARY PHARMACY

Organization of pharmaceutical business and medicine preparation technology. Demands of the systems GMP, GDP, GCP in pharmacy. Production and development of drugs.

Disciplines course chosen by students	Semester	Credits
Pharmaceutical chemistry	2	1,0
Pharmacognosis	2	1,0
Pharmaceutical technology of drugs preparation	2	2,0
Organisation of pharmaceutical business	2	1,0
Systems GMP, GDP, GCP in pharmacy	2	2,0
Production and development of drugs	2	2,0
Total		**9,0**

Proposed topics for master's papers:

1. Improvement of methods of extraction of active substances from plant raw material in veterinary medicine.
2. State and perspective of GMP system introduction in drugs preparation in veterinary medicine.
3. Comparative characteristics of drugs effect depending on medicinal form.

Master programme

ORGANIZATION AND MANAGEMENT OF VETERINARY SERVICE

State veterinary and sanitary expertise of foodstuff. Livestock products quality and safety, methods of their identification in Ukraine and EU countries. Peculiarities of

the technology of livestock products production. Livestock products standardization and certification. Risks analysis in foodstuff production.

Disciplines course chosen by students	Semester	Credits
Livestock products quality and safety	2	2,0
State veterinary and sanitary expertise	2	2,0
Technology of livestock products production	2	2,0
Livestock products standardization and certification	2	1,0
Foodstuff microbiology	2	1,0
Risks analysis in foodstuff production	2	1,0
Total		**9,0**

Proposed topics for master's papers:

1. Monitoring of antibiotics in livestock products.
2. Peculiarities of veterinary and sanitary expertise of livestock products in supermarkets.
3. Monitoring of indicators of meat quality and safety imported into Ukraine.

Master programme

ORGANIZATION AND MANAGEMENT OF VETERINARY SERVICE

Organization and legal principles and veterinary service management at the enterprises of state and private forms of ownership. Organization of setting up of private business on the market of veterinary goods and services.

Disciplines course chosen by students	Semester	Credits
Veterinary legislation and law	2	2,0
Private veterinary practice	2	2,0
Organization and legal principles of state veterinary inspection	2	2,0
Planning in veterinary medicine	2	2,0
Management of veterinary business	2	1,0
Total		**9,0**

Proposed topics for master's papers:

1. Organization of veterinary medicines production at ltd „Brovapharma".
2. Veterinary service management at the customs.
3. Legal principles of veterinary pharmacy registration.

Master programme

DISEASES PROPHYLAXIS AND PRODUCTIVE ANIMALS THERAPY

Principles, methods and ways of general diagnostics, therapy and prophylaxis of productive animals diseases applying distance and digital devices and nanotechnologies.

Disciplines course chosen by students	Semester	Credits
Birds diseases	2	1,0
Horses diseases	2	2,0
Ruminants diseases	2	3,0
Pigs diseases	2	3,0
Total		**9,0**

Proposed topics for master's papers:

1. Development of diagnostics and prophylaxis measures of cows mastitis.
2. Group therapy of birds' noninfectious diseases.
3. Diagnostics, therapy and prophylaxis of productive animals applying nanotechnologies.

Master programme

JUDICIAL VETERINARY MEDICINE

Legal aspects of the activity of veterinary medicine doctor, judicial veterinary expert. Methods of judicial veterinary of animals autopsy and taking materials for criminalistic and laboratory researches.

Disciplines course chosen by students	Semester	Credits
Legal aspects of the activity of veterinary medicine doctor	2	2,0
judicial veterinary autopsy	2	3,0
Methodology and methods of judicial veterinary expertise	2	3,0
Professional offences and amenability for them	2	1,0
Total		**9,0**

Proposed topics for master's papers:

1. Criteria of limitation definition of death beginning of animals of different kinds.
2. Methods of judicial expertise of surgical manipulations.
3. Methods of ascertainment of animals poisoning reasons.

Master programme

RUMINANT DISEASES

Current technologies of the production of cattle breeding, sheep farming, goat raising products. Advanced methods of ruminants reproduction, peculiarities of infectious and noninfectious pathology, methods and ways of ruminants diseases diagnostics and prophylaxis.

Disciplines course chosen by students	Semester	Credits
Current technologies of the production of cattle breeding, sheep farming, goat raising products	2	2,0
Advanced methods of ruminants reproduction	2	2,0
Noninfectious pathology in cattle breeding, sheep farming, goat raising products	2	2,0
Anti epizootic business	2	3,0
Total		**9,0**

Proposed topics for master's papers:

1. Application of current methods in diagnostics, treatment and prophylaxis of cattle infertility.
2. Rehabilitative therapy using biogenic composition of microelements and minerals in ruminants diseases.
3. Development of anti epizootic measures in ruminants infectious diseases.

Master programme

HORSES DISEASES

Current technologies of breeding and use, the peculiarities and diagnostics, treatment and prophylaxis of infectious and noninfectious horse pathology.

Disciplines course chosen by students	Semester	Credits
Current technologies of horse breeding and use	2	1,0
Advanced methods of diagnostics and treatment of noninfectious horse pathology	2	3,0
Biotechnology of horse reproduction	2	1,0
Anti epizootic and anti parasitic measures in horse breeding	2	4,0
Total		**9,0**

Proposed topics for master's papers:

1. Epizootology, diagnostics and prevention measures with horse satyriasis in Pollisia zone.
2. Comparative efficiency of insect and acaricidic medicines for horse ectomosis and acarosis.
3. Horse reproduction on stud farm.

Master programme

PIGS DISEASES

Current technologies of pork production according to the principle veterinary demands. Advanced methods of pigs reproduction at specialized pork production enterprises, application of prophylactic and special anti epizootic measures.

Disciplines course chosen by students	Semester	Credits
Current technologies of pork production	2	2,0
Advanced methods of pigs reproduction	2	2,0
Current schemes of pigs diseases prophylaxis	2	5,0
Total		**9,0**

Proposed topics for master's papers:

1. Elaboration of measures of pigs' infectious diseases prophylaxis.
2. Elaboration of methods of diagnostics, treatment and prophylaxis of associative pigs' diseases.
3. Elaboration of system of measures in treatment and prophylaxis of infertility on pigs' farms.

Master programme

CATS AND DOGS DISEASES

Dietology. Dogs and cats reproduction. The most spread infectious and invasive diseases specific for cats and dogs, methods of their diagnostics, treatment and means of prophylaxis. Traumatology. Stomatology. Ophthalmology.

Disciplines course chosen by students	Semester	Credits
Dietology	2	1,0
Orthopedics, stomatology, ophthalmology	2	2,0
Infectious pathology of cats and dogs	2	3,0
Noninfectious pathology of cats and dogs	2	3,0
Total		**9,0**

Proposed topics for master's papers:

1. Application of current methods of diagnostics and treatment in orthopedics and traumatology of small domestic animals.
2. Application of current methods of diagnostics and treatment stomatological pathology of small domestic animals.
3. Diagnostics, treatment and prophylaxis of cats and dogs infertility of infectious etiology.

Master programme

VIRUSOLOGY IN VETERINARY MEDICINE

Current data about systematization, morphology, reproduction, genetics, antigenic, immunogenic and pathogenic features of the spinal viruses. Classical and advanced methods of laboratory diagnostics of animals virus diseases, ways and methods of viruses identification and antibodies inducted by them.

Disciplines course chosen by students	Semester	Credits
Viruses biology	2	2,0
Laboratory diagnostics of animals virus diseases	2	7,0
Total		**9,0**

Proposed topics for master's papers:

1. Molecular and genetic methods in veterinary virusology.
2. Viruses antigenic, immunogenic and pathogenic features.
3. Research of antivirus action of micro organisms with probiotic features.

Master programme

LABORATORY DIAGNOSTICS OF SMALL ANIMALS DISEASES

Peculiarities of laboratory researches of small animals health state. The practice of carrying out of immunologic, biochemical, hematological, micro biological laboratory analysis for diseases diagnostics and the main disorders of functions of animals systems and organs in clinics.

Disciplines course chosen by students	**Semester**	**Credits**
Peculiarities of laboratory diagnostics of small animals diseases	2	2,0
Laboratory diagnostics of small animals infectious diseases	2	3,0
Laboratory diagnostics of small animals noninfectious diseases	2	4,0
Total		**9,0**

Proposed topics for master's papers:

1. Application of complex laboratory diagnostics to study dogs' digestion organs functions.
2. Comparative characteristics of laboratory diagnostics of cats urino-genetal system diseases.
3. Laboratory diagnostics to identify dogs prostate diseases.

Master programme

BIRDS DISEASES

Technological processes on poultry farms according to the current sanitary and hygienic demands. Technological prophylactic schemes of the most spread infectious and noninfectious birds diseases. Economy of current poultry industry.

Disciplines course chosen by students	**Semester**	**Credits**
Current technologies of birds feeding and maintenance	2	2,0
Economy of current poultry industry	2	1,0
Technological prophylactic schemes of birds diseases	2	6,0
Total		**9,0**

Proposed topics for master's papers:

1. Veterinary support of technological processes in poultry industry.
2. Prophylaxis of the most dangerous birds' diseases.
3. Prophylaxis of mineral metabolism of broilers applying biogenic elements.

RESEARCH- ORIENTED SPECIALIZATION

Disciplines course chosen by the university	**Semester**	**Credits**
System of quality support and information technologies in veterinary medicine	1	1,0
Legislation in veterinary medicine (WTO, EU)	1	1,0
Veterinary service and organization of private veterinary practice	1	1,0
Total		**3,0**

Master programme

OPTIMIZATION OF THE SYSTEM OF ANTI TUBERCULOSIS MEASURES IN UKRAINE

Study of etiology and ecology of tuberculosis agent, epizootology and current methods of diagnostics and optimization of anti tuberculosis measures in Ukraine.

Disciplines course chosen by students	**Semester**	**Credits**
Scientific principles of animal tuberculosis prophylaxis and liquidation	2	6,0
Methodological principles and methods of scientific researches in study of animal infectious disease	2	1,0
Organization of anti tuberculosis measures	2	2,0
Total		**9,0**

Proposed topics for master's papers:

1. Study of epizootic situation tension of cattle tuberculosis.
2. Study of M.bovis agent ecology.
3. Improvement of diagnostics of anti tuberculosis measures in Ukraine.

Master programme

SCIENTIFIC ELABORATION OF CORRECTION OF HEAVY METALS CONTENTS IN ANIMALS ORGANISMS AND THEIR ELIMINATION

Biochemical principles of scientific problem, technique of biochemical researches applying current laboratory equipment and devices, experimental researches to elaborate the methods of correction of heavy metals poisoning.

Disciplines course chosen by students	**Semester**	**Credits**
Main methods and devices of laboratory researches	2	3,0
Biochemical methods of researches	2	6,0
Total		**9,0**

Proposed topics for master's papers:

1. Influence of biologically active substances on cadmium accumulation and migration in animals organisms.
2. Applying of anti oxidants to reduce heavy metal influence in laboratory animals' organisms.
3. Mechanisms of heavy metals toxic influence on mineral metabolisms in animals' organisms.

Master programme

PHYSIOLOGY OF ANIMAL HIGHER NERVOUS ACTIVITY

Processes of stimulation and inhibition in higher divisions of central nervous system. Forecast of animals behaviuor, reaction on irritants and their connection with productivity.

Disciplines course chosen by students	**Semester**	**Credits**
Physiology of higher nervous system	2	3,0
Histology of nervous tissue	2	3,0
Pharmacodynamics and pharmacokinetics of medicines that influence central and peripheral nervous system	2	3,0
Total		**9,0**

Proposed topics for master's papers:

1. Conditional and reflex activity of animals of different types of HNA.
2. Dynamics of stimulation and inhibition processes of animals of different types of HNA and their connection with productivity.
3. Efficiency of hydro phosphates use to increase the productivity and resistance of cows of different types of HNA.

Master programme

RISKS ANALYSIS IN PRODUCTION, PROCESSING, STORAGE AND TRANSPORTATION OF LIVESTOCK PRODUCTS

Peculiarities of risk analysis at control stagnation points in livestock products production and processing. Quantative and qualitative methods of risks analysis. The possibility of risks analysis applying in the process of livestock products production and processing as a component of foodstuff safety and guaranty.

Disciplines course chosen by students	**Semester**	**Credits**
State veterinary and sanitary expertise	2	2,0
Risks analysis in foodstuff production	2	7,0
Total		**9,0**

Proposed topics for master's papers:

1. Identification of harmful factors in poultry products production.
2. Peculiarities of risks analysis concepts at control stagnation points in beef production.
3. Scientific approaches to risk analysis and management of harmful factors in semi-finished goods.

Master programme

DISTANCE DIAGNOSTICS OF ANIMAL CLINIC INDICATORS

Methods, devices and equipment for distance diagnostics of animal clinic indicators.

Disciplines course chosen by students	**Semester**	**Credits**
Introduction into scientific speciality 16.00.01	2	3,0
Biophysical principles of animals diseases diagnostics	2	3,0
Veterinary information science and telemedicine	2	3,0
Total		**9,0**

Proposed topics for master's papers:

1. Distance diagnostics of animal clinic indicators in respiration organs pathology.
2. Distance diagnostics of animal clinic indicators in digestion organs pathology.
3. Distance diagnostics of animal clinic indicators in cardiovascular system pathology.

Master programme

CATTLE ECTOPARASITORY DISEASES

Study of epizootologic peculiarities of cattle ectoparasitory and elaboration of anti parasitory measures system.

Disciplines course chosen by students	**Semester**	**Credits**
Advanced methods of ectoparasitory diagnostics	2	3,0
Current methods of prevention of cattle ectoparasitory	2	6,0
Total		**9,0**

Proposed topics for master's papers:

1. Diagnostics and development of prevention methods of cattle ectoparasitory.
2. Diagnostics and development of prevention methods of horses ectoparasitory.
3. Diagnostics and development of prevention methods of small domestic animals ectoparasitory.

MASTER PROGRAMMES OF EDUCATIONAL AND SCIENTIFIC INSTITUTE OF ENVIRONMENT PROTECTION AND BIOTECHNOLOGIES

Educational and scientific institute of environment protection and biotechnologies is involved in educational, research, innovative, methodical, production, information and extension and educative activities to obtain higher education, qualification and specialities in the direction “Ecology”, “Biotechnologies” and specialities of this directions aimed at the solution of current problems of sciences about life, development and extension of up-to-date resource-saving agrotechnologies, soil renewal and protection technology, plant products and their processing quality and safety control.

Faculties which provide Master training:

Faculty of ecology and biotechnology

It organizes and coordinates training of specialists taking into consideration current possibilities of information technologies. The training is aimed at the formation of knowledge, skills, professional adaptability to market economy which is developing on current principles of rational nature use, under conditions of stable renovation of scientific ecological knowledge, extension of ecologic innovations and application of current ecobiotechnologies, systems of ecological management of ecology safety organization in AIC.

The Master training and education process at the institute of environment protection and biotechnologies envisages production and research specialization in each speciality. This enables graduates to be ready to the following activities: innovative and professional at enterprises and organizations of different forms ownership; scientific activity at scientific research institutions (including at post graduate course). The Bachelors have the possibility to continue their study in specialities of the directions “Specific categories”, “Pedagogics of higher school”, “Quality, standardization and certification”, “Business administration” and in speciality “State service” of the direction “State administration”.

Centers of practical training are SD of NULES ″Agronomy Research Station″; SD of NULES ″Velyka Snitynka TRF named after O.V. Muzychenko″; Interinstitute TSC of plant biology and ecology, landscape science (Training-Scientific Center of Biology and Ecology of Subtropical Plants and Landscape Science (Yalta, AR of Crimea); scientific and research institutions of NAS of Ukraine and UAAS; ltd „Karapyshi"; ecomonitoring enterprise „Tirol’"; Agency of rational energy and ecology use „Arena Eco"; ltd „TRF „Gradient"; PE „Ecotechnology"; RE „Ukrainian scientific research and training centre of standardization, certification and quality"; TRF „Eco-Ukrainian"; RE „Agroresources"; PE „Agroecology"; ltd agrofirm „Hermes"; „NUTRITECH UKRAINE" Ltd.; Institute of European safety and conversion; RE „E-Consulting"; AGRO TRIDENTA, etc.

The institute cooperates with leading foreign higher institutions of Eastern and Western Europe, Asia and South America.

The institute has friendly relations with Ghent university (Belgium), Humboldt university (Berlin) (Germany); Tokyo agricultural university (Japan); Academy of agrarian sciences (Chzhetszian’, China), universities of Iowa, Louisiana and Connecticut. Memoranda about inter-recognition of education systems have been signed.

The agreement concluded between the faculty of ecology and biotechnology of NULES of Ukraine and Wageningen University (WUR, Netherlands) gives the Master graduates possibility to obtain diplomas of higher education.

Scientists of institute of environment protection and biotechnologies together with leading of Wageningen university specialists (Netherlands) collaborate in mutual Master programmes – „Study about environment (sciences about environment)”. „Environment quality and system analysis”, „Ecological management and policy”, „Ecology of geo spheres and GIS (Study about GIS) ” have already been put into practice. „Ecosafety technologies”, „Reservations and nature protection” are going to be put into action.

Specialities:

8.070801 – „Ecology and environment protection”;
8.092903 – „Ecobiotechnology”.

Qualification of Master graduates according to the state classificator of professions of Ukraine:

In speciality 8.070801 „ Ecology and environment protection*”* 2211.2 – ecologist, 2149.2 – engineer in technogenic and ecological safety, 2213.2 – engineer

in nature use, 2213.2 – engineer in natural ecosystems renewal, 3449 – inspector in national parks protection, 2265.2 – inspector in nature protection, 2211.2 – expert in ecology, 2442.2 – specialists in nature use management, 2211.2, 2310.2 – ecologist, lecturer of higher educational institution, 2148.2 – specialists in GIS monitoring;

In speciality 8.092903 „ Ecobiotechnology*”* 2211.1 – scientific officer (biology), 2211 – biotechnologist, 2213.1 – scientific officer (agronomy, zoo engineering, silviculture, reservations), 2213.2 – engineer in natural ecosystems renewal.

Master graduates can be employed at

- Departments of ecological safety: divisions of ecological safety, pesticides and agrochemicals, waste and dangerous chemicals treatment, examination and giving permissions and licenses.
- Department of biotic resources and econet: division of water resources regulation.
- State administrations of environment protection in regions, districts, Kyiv and Sevastopol'; republic committee of environment protection of AR Crimea.
- Department of strategic planning: divisions of market and prospective planning, ecologic and economic development, ecologic audit and management, target planning and regional policy. Sector of production activity.

SPECIALITY
8.070801 „ECOLOGY AND ENVIRONMENT PROTECTION”

Master programme of industry-oriented specialization

Agro sphere water resources ecology and protection	TSC of ecological standardization and certification (educational building № 17, room № 214, tel. 527-81-72) TSC of chemical sciences Department of analytical and bio nonorganic chemistry and water quality (educational building № 2, room № 13, tel. 527-80-95) Coordinator – V. A. Kopilevych, doctor of chemical sciences, professor V. Ye. Kosmatyi, candidate of chemical sciences, associate professor
Ecologic control in agro sphere: monitoring, passportization, expertise	TSC of ecological standardization and certification Department of ecology of agro sphere and ecological control (educational building №4, room №72, tel. 527-81-95) Coordinator – V. M. Chaika, doctor of agricultural sciences, associate professor O. I. Naumovs’ka, candidate of agricultural sciences, associate professor

Master programme of research-oriented specialization

Social and ecological expertise and stable development of agricultural territories	TSC of ecological standardization and certification Department of general ecology and life safety (educational building №4, room № 67б, tel. 527-87-65) Coordinator – V. A. Prylypko, doctor of medical sciences, senior scientific officer

Ecological management and policy	TSC of ecological standardization and certification Department of ecology of agro sphere and ecological control (educational building №4, room №72, tel. 527-81-95) Coordinator – M. M. Borysiuk, candidate of agricultural sciences, associate professor
Technogenic and ecological and radiation safety*	TSC of ecological standardization and certification Department of radiobiology and radioecology (educational building №12, room №403, tel. 527-89-26) Coordinator – I. M. Gudkov, doctor of biological sciences, professor
Hydroecology and system analysis of water ecosystems*	TSC of ecological standardization and certification TSC of chemical sciences Department of analytical and bio nonorganic chemistry and water quality (educational building № 2, room № 13, tel. 527-80-95) Coordinator – V. A. Kopilevych, doctor of chemical sciences, professor V. Ye. Kosmatyi, candidate of chemical sciences, associate professor

* the programmes are going to be put into practice

Master programme of research- oriented specialization in cooperation with European Union (EU)

Environment quality and system analysis	TSC of ecological standardization and certification Department of ecology of agro sphere and ecological control (educational building №4, room №72, tel. 527-81-95) Coordinator – V. M. Chaika, doctor of agricultural sciences, associate professor v. I. Prydatko, candidate of biological sciences, associate professor
Ecological management and policy	TSC of ecological standardization and certification Department of ecology of agro sphere and ecological control (educational building №4, room №72, tel. 527-81-95) Coordinator – M. M. Borysiuk, candidate of agricultural sciences, associate professor
Geospheres and GIS ecology (science about GIS)	Department of geoinformation systems and technologies (educational building №6, room №132, tel. 527-93-87) Coordinator – S. S. Kokhan, candidate of agricultural sciences, associate professor
Ecosafety technologies*	TSC of ecological standardization and certification Department of ecobiotechnology and boidiversity (educational building №4, room №35, tel. 527-85-17) Coordinator – M. D. Mel'nychuk, doctor of biological sciences, professor
Reservations and nature protection*	TSC of ecological standardization and certification Department of ecology of agro sphere and ecological control (educational building №4, room №72, tel. 527-81-95) Coordinator – I. P. Grygoriuk, doctor of biological sciences, professor B. A. Gaichenko, doctor of biological sciences, professor

* the programmes are going to be put into practice

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines course according to the requirements of MES		
Civil defense	1	1,5
Labour protection in branch	1	1,5
Pedagogics and psychology of higher school	1	1,5
The methods of teaching in higher school	1	1,5
Methodology and scientific researches organization	1	3,0
Information technologies	1	3,0
Ecology management and audit	1	3,0
The strategy of stable development	1	3,0
Ecological standardization and certification	1	3,0
Total		**21,0**
Disciplines course chosen by the university	1,2	**20,0**
Disciplines course chosen by students	1,2,3	**18,0**
State attestation		
Practice	1,2	19,0
Preparation and defence of master's paper	3	5,0
Total		**24,0**
Total		**90,0**

INDUSTRY-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
Intellectual property and world information resources	2	4,0
Agricultural radioecology	2	3,0
Problems of ecological safety and current concepts of environment use optimization	2	3,0
Theory of systems in ecology. System analysis of environment quality	2	3,0
Ecological policy	2	4,0
GIS-analysis of agro landscapes	2	3,0
Total		20,0

Master programme

AGRO SPHERE WATER RESOURCES ECOLOGY AND PROTECTION

The concept of the programme is to train highly-qualified experts-ecologists who have proper knowledge in current state of hydrosphere – surface, subterranean and underground waters, diagnostics of water quality due to natural and anthropogenic factors effect on water ecosystems, classification of water resources.

Disciplines course chosen by students	Semester	Credits
Ecological safety of water ecosystems	3	6,0
Sewage disposal	3	3,0
Utilization and neutralization of sewage	3	3,0
Methodology of current chemical analysis	3	3,0
Chemistry of environment	3	3,0
Total		18,0

Proposed topics for master's papers:

1. Ecological evaluation of agricultural production influence on water ecosystems.
2. Identification of ecological condition of agrosphere water resources according to the water quality indices and their change forecast under anthropogenic capacity.
3. Ecological condition of water resources of Ukraine .
4. Ecological passportization of water sources of different origin.

Master programme

ECOLOGIC CONTROL IN AGRO SPHERE: MONITORING, PASSPORTIZATION, EXPERTISE

The concept of the programme is to train highly-qualified experts-ecologists who have proper knowledge in current state of agro ecosystems and ecological problems of agrosphere, ways of increase of resistance and stability of agro ecosystems and methods of land use in agricultural production branches, mechanisms of AIC ecological management, ways and methods of improvement of ecological and economic efficiency of agricultural activity.

Disciplines course chosen by students	**Semester**	**Credits**
Ecologic inspection	3	3,0
Biophysics of environment	3	3,0
Agroecology	3	6,0
Ecological expertise of agricultural production	3	3,0
Agroecological monitoring and lands passportization	3	3,0
Total		18,0

Proposed topics for master's papers:

1. Ecological expertise of agricultural products and raw material production technologies.
2. Evaluation of the influence of potentially harmful agroenterprises on environment.
3. Agroecologic monitoring and passportization of territories of enterprises of agro sphere.
4. Agroecologic evaluation of lands to grow crops.
5. Evaluation of usefulness of lands of agricultural purpose in formation of special raw material zones to get biologically valuable ecologically safety products.

RESEARCH- ORIENTED SPECIALIZATION

The concept of the programme of research-oriented specialization in speciality 8.070801 „Ecology and environment protection" is to form knowledge about science as a productive force, its essence, main functions, classifications of sciences about environment, scientific and technical potential of ecological science, organization of scientific and research activity in environment protection in Ukraine, international cooperation of Ukraine in the sphere of natural resources protection of preservation and renewal.

Master students study current possibilities of formation of information database of the researches: biosphere, geospheres of the Earth, sociospheres, agrosphere, technosphere, urban sphere, principles of information database collection about natural and anthropogenically changed ecosystems, scientific documents preparation.

Disciplines course chosen by the university	**Semester**	**Credits**
Intellectual property and world information resources	2	3,0
Agricultural radioecology	2	3,0
Problems of ecological safety and current problems of environment use	2	4,0
System analysis of environment quality. Systems theory in ecology	2	3,0
Ecological policy	1	4,0
GIS-analysis of agro landscapes	2	3,0
Total		**20,0**

Master programme

SOCIAL AND ECOLOGICAL EXPERTISE AND STABLE DEVELOPMENT OF AGRICULTURAL TERRITORIES

The concept of the programme is to train highly-qualified experts-ecologists to solve global ecological problems to optimize the system „biosphere – society", transformation of society to the stable and balanced level of development.

Disciplines course chosen by students	**Semester**	**Credits**
Socioecology of agrosphere	3	3,0
Methods of socioecological researches	3	3,0
Socioecological monitoring	3	3,0
Ecological geography	3	3,0
Social aspects of ecological policy	3	3,0
Ecological expertise of rural territories development	3	3,0
Total		**18,0**

Proposed topics for master's papers:

1. Social evaluation of ecological risk and safety of agricultural production branches influence.
2. Socioecological monitoring and expertise of AIC branches activity.
3. Socioecological analysis of agro ecosystems and rural settlements infrastructure.
4. Stable development of rural territories and environment: ecologically balanced, social and economic.

Master programme

ECOLOGICAL MANAGEMENT AND POLICY

The concept of the programme is to form knowledge about organization structure, planning of activity, distribution of responsibility and practical realization, procedures, processes and resources for development, extension of the management system relations and methods, achievement of ecological policy targets and ecological problems solution; ecological strategies of economic entities, forecast, prevention and liquidation of ecological disorders effects; satisfaction of population ecological needs.

Disciplines course chosen by students	**Semester**	**Credits**
International ecological policy	3	3,0
Ecological economy	3	3,0
State ecological administration	3	6,0
Eco systematization	3	3,0
Ecological inspection	3	3,0
Total		**18,0**

Proposed topics for master's papers:

1. Ecological management – international experience and standards.
2. State and perspective development of ecological management in Ukraine.
3. Ecological management, marketing and audit at agrosphere enterprises.
4. Global national (state), regional, branch, corporative ecological policy.
5. Ecological mechanisms of environment use management at agroenterprises.

the programme is going to be put into practice

*TECHNOGENIC AND ECOLOGICAL AND RADIATION SAFETY**

The concept of the programme is to train highly-qualified experts-ecologists who have proper knowledge in ionic radiation sources, peculiarities of radioactive substances migration in the environment and the ways of their inflow into human organism, theoretical principles of management of separate branches of economy on contaminated territories, ways of protection from ionic radiation, skills to evaluate radiation situation under proper conditions, forecast of possible level of radio nuclide contaminations of different objects of environment under proper conditions, isotope.

Disciplines course chosen by students	**Semester**	**Credits**
Ecological problems of radioactive contaminated territories	3	3,0
Principles of radioactive physics and radiation control	3	3,0
Radio ecological monitoring	3	3,0
Biophysics of environment	3	3,0
Radiation safety	3	6,0
Total		**18,0**

Proposed topics for master's papers:

1. Radio ecological passportization of AIC enterprises.
2. Radiation safety of natural and agricultural (agro-) ecosystems.
3. Ecological aspects of agricultural production on contaminated territories.
4. Ecological safety in AIC.

the programme is going to be put into practice

*HYDROECOLOGY AND SYSTEM ANALYSIS OF WATER ECOSYSTEMS**

The concept of the programme is form knowledge about: hydrosphere as buffer earth system, water cover of the Earth, main water function in biosphere and water supply sources, water reserves and circulation in nature; classification of water recourses and types of water ecosystems, water ecosystems and their place in biosphere, trophic of water ecosystems structure of biota, water ecosystems bio productivity, definition of territories with hydro ecological risks.

Disciplines course chosen by students	**Semester**	**Credits**
Quality monitoring and ecological passportisation of water in agrosphere	3	6,0
Sewage disposal, utilization and neutralization of sewage	3	3,0
Chemistry of environment and methodology of current chemical analysis	3	3,0
Hydrology: hydrochemistry, hydro physics, hydrobiology	3	3,0
Hydro ecology and methods of hydro ecological researches	3	3,0
Total		**18,0**

Proposed topics for master's papers:

1. System analysis of water ecosystems and prevention of hydro-ecological problems.
2. Water quality of different origin and purpose.
3. Ecologically safety water use in agrosphere.
4. System analysis of agricultural activity influence on water ecosystems.

Master programme in cooperation with EU

ENVIRONMENT QUALITY AND SYSTEM ANALYSIS

The concept of the programme is to form knowledge about system approach to ecology, origin, structure, links in ecological systems, classification of ecological systems, key natural ecosystems; properties (natural abiotic, biotic and unnatural) of ecosystems elements and their subsystems groups; their entirety, functionality, dynamisms, energy ability, productivity; anthropogenic deformation of natural ecosystems (local, regional, national); biosphere and ecological systems characteristics, biosphere laws. The programme assists to analyze links, interaction between ecosystem components; to characterize the peculiarities of ecosystems and their classification, the influence of ecological factors on ecosystem state and development.

Disciplines course chosen by the university	**Semester**	**Credits**
Intellectual property and world information resources	2	4,0
Ecological policy	1	5,0
System analysis of environment quality. Systems theory in ecology	2	4,0
Geoinformation monitoring (ecological databases) and GIS-analysis of agro landscapes	2	3,0
Radioecology	2	4,0
Total		**20,0**

Master programme in cooperation with EU

SOIL QUALITY ANALYSIS AND SYSTEM ANALYSIS OF SURFACE ECOSYSTEMS

The concept of the programme is to form knowledge about soil quality parameters, their protection, conservation, mechanisms of soil fertility renewal; soil quality systems of standards, degradation processes; terms and definition of soil quality and protection and steady land use; soil contamination (natural and anthropogenic) and their division according to the contamination level; passportization, classification of soils to control and manage soil resources.

Disciplines course chosen by students	**Semester**	**Credits**
Lands appraisal	3	6,0
Ecological expertise in AIC	3	3,0
Ecological monitoring and land passportization	3	6,0
Geoinformation monitoring of environment and GIS-analysis of agro landscapes	3	3,0
Total		**18,0**

Proposed topics for master's papers:

1. Ecological control of soil quality – ecological passportization of territories.
2. Agroecological evaluation of lands to grow crops.
3. Evaluation of lands suitability in the formation of ecologically safety raw material zones to get child's and dietic foodstuff.
4. Ecological monitoring of surface ecosystems – landscape and indicative approach.

Master programme in cooperation with EU

WATER QUALITY AND SYSTEM ANALYSIS OF WATER ECOSYSTEMS

The concept of the programme is to train highly-qualified experts-ecologists who have proper knowledge in current state of water ecosystems, surface, underground and subsoil waters, who are able to plan scientific research activity independently, take samples, conduct physical and chemical and analytical researches of water quality, to make decisions about ecologically balanced actions aimed at the improvement of ecological situation.

Disciplines course chosen by students	**Semester**	**Credits**
Water ecosystems	3	6,0
Geoinformation monitoring	3	6,0
Water resources management	3	6,0
Total		**18,0**

Proposed topics for master's papers:

1. Ecological and water and economic approach to define water quality.
2. Ecology of water use.
3. Anthropogenic capacity and evaluation of ecological condition of water systems.
4. Agricultural activity influence on water ecosystems condition.

Master programme in cooperation with EU

ENVIRONMENT QUALITY AND SYSTEM ANALYSIS AIC QUALITY AND SYSTEM ANALYSIS OF ANTHROPOGENIC CLIMATE CHANGES

The concept of the programme is to form knowledge about definition of biosphere and ecological systems, biosphere laws; assists to analyze links, interaction between ecosystems components; to characterize the peculiarities of ecosystems and their classification, the influence of ecological factors on ecosystem state and development; to determine anthropogenic capacity on systems and give quantative evaluation to anthropogenic influence and economic activity, analyze energetic and substance changes in ecosystems, peculiarities of links in self-regulation system; compare properties of natural and anthropogenically changed agrop-, urban-, techno-ecosystems.

Disciplines course chosen by students	**Semester**	**Credits**
Ecotoxicology and risk evaluation	3	6,0
Monitoring of air quality	3	6,0
Meteorology and climatology	3	6,0
Total		**18,0**

Proposed topics for master's papers:

1. Anthropogenic climate changes and ecological condition of biological systems.
2. Global climate changes and geopolitics.
3. Agroclimatic resources of agro ecosystems.
4. Agroclimatic methods of biological productivity evaluation.

Master programme in cooperation with EU

ECOLOGICAL MANAGEMENT AND POLICY

The concept of the programme is to form knowledge about organization structure, activity planning, distribution of responsibilities, procedures and resources to elaborate the system of managerial relations and methods, improvement of nature protection managerial decisions; achievement of ecological policy targets and solution of natural resources, ecological problems of different levels and types of economic activity; system of nature use measures and ecological strategies of economic entities, forecast, prevention and liquidation of the effects of ecological disorders.

Disciplines course chosen by students	**Semester**	**Credits**
International ecological policy	3	6,0
Ecological inspection	3	3,0
State ecological administration	3	3,0
Ecological management of contaminated territories	3	3,0
Organization of ecologic public measures	3	3,0
Total		**18,0**

Proposed topics for master's papers:

1. Ecological management – international experience and standards.
2. State and perspective development of ecological management in Ukraine.
3. Ecological management, marketing and audit at agrosphere enterprises.
4. Global national (state), regional, branch, corporative ecological policy.
5. Ecological mechanisms of environment use management at agroenterprises.

Master programme in cooperation with EU

GEOSPHERES AND GIS ECOLOGY (SCIENCE ABOUT GIS)

The concept of the programme is to form knowledge about ecological problems caused by anthropogenic activity, risks, danger of function of natural and anthropogenically changed ecosystems of different space and hierarchical level; geosphere ecological safety, strategies of ecological problems solution, information technologies of forecast, prevention and liquidation of ecological dangers; application of geo informatics and eco informatics to give information about environment condition; application of ecotechnologies for elaboration and extension of ecologically safety and energy saving technologies.

Disciplines course chosen by students	**Semester**	**Credits**
GIS-analysis of agro landscapes and principles of geostatictics	3	6,0
Distance management	3	4,0
ASC of environment condition	3	4,0
Technical supply of GIS	3	4,0
Total		**18,0**

Proposed topics for master's papers:

1. Geoinformation infrastructure of ecological datebases (EGIS) and distance management of information spreading.
2. Geoinformation monitoring of environment, modeling and forecast of environment condition.
3. Systematization of data of geoinformation monitoring of regional and global changes of hypotheses formation about biospheric processes and structure of biospheric levels.
4. Geoinformation systems for AIC: biological, food, ecological safety of agrosphere.

the programme is going to be put into practice

*ECOSAFETY TECHNOLOGIES**

The concept of the programme is to study production with minimal influence on environment on human organism, which are connected with the applying of intellectual computer technologies and permit to control all production processes, use automized environment condition control systems, manage nature protection technologies.

Disciplines course chosen by students	**Semester**	**Credits**
Agribiotechnologies	3	3,0
Nature protection biotechnologies	3	3,0
Alternative energetics: bioenergetics and bioenergy conversion	3	3,0
Ecologically safety technologies	3	6,0
Technologies of sewage disposal, utilization and neutralization of sewage	3	3,0
Total		**18,0**

Proposed topics for master's papers:

1. Evaluation of the influence of branches and AIC enterprises on environment and development of ecologically safety technologies.
2. Ecologization of AIC branches and introduction of ecological innovations.
3. Ecological biotechnologies and agribiotechnologies.
4. Automized environment condition control systems.
5. Nature protection technologies of waste utilization.

the programme is going to be put into practice

RESERVATIONS AND NATURE PROTECTION

The concept of the programme is to form knowledge about concepts and ways of conservation of natural landscape and biological biodiversity using reservations, territories and water arias which are under special control to support ecological balance under increase irreversible changes in natural ecosystems.

Disciplines course chosen by students	**Semester**	**Credits**
Biological monitoring	3	3,0
Medicinal herbs growing, technologies of medicinal herbs growing and their use in veterinary medicine	3	3,0
Organization and management of ecological system	3	3,0
Audit of NRR	3	3,0
Reservation science	3	3,0
Forest ecosystems, forest resource management, nutritive resources of forest ecosystems	3	3,0
Total		**18,0**

Proposed topics for master's papers:

1. Audit of natural reserves resources.
2. Organization and management of ecological system.
3. Nutritive resources of forest ecosystems.
4. State reserves service .
5. Bio monitoring and bio testing of natural and anthropogenically changed ecosystems.

SPECIALITY
8.092903 „ECOBIOTECHNOLOGY”

Master programme of industry-oriented specialization

Nature protection biotechnologies	TSC of biotechnology (educational building №4, room №35, tel. 527-85-17) Coordinator – O. L. Kliachenko, candidate of biological sciences, associate professor TSC of chemical sciences Department of analytical and bio nonorganic chemistry and water quality (educational building № 2, room № 13, tel. 527-80-95) Coordinator –V. Ye. Kosmatyi, candidate of chemical sciences, associate professor
Hydroecology and water ecosystems monitoring	ITSC of hydroecology and water ecosystems monitoring (educational building №4, room №71, training laboratory of melioration and hydro melioration) Coordinator – B. I. Konakov, candidate of technical sciences, associate professor tel.: 527-88-47
Biological agrosystems plants protection	ITSC of agroecosytems of biological protection (educational building №4, room №75, tel. 527-88-47; STPL of biological agrosystems plants protection, Rodimtseva str. 19, 527-80-88) Coordinator – L. P. Yuschenko, candidate of agricultural sciences, associate professor tel.: 527-80-88; 527-88-47

Master programme of research-oriented specialization

Alternative energetics	ITSC of alternative energetics (of diesel biofuel, educational building №17, room №102, STPL of diesel biofuel, ARS „Mytnytsia”) Coordinator – V. M. Polischuk, candidate of technical sciences, associate professor tel.: 527-88-47
DNA-passportization and genome mapping	TSC of biotechnology (educational building №4, room №35, tel. 527-85-17) Coordinator – O. L. Kliachenko, candidate of biological sciences, associate professor
Biosafety and bioethics	TSC of biotechnology (educational building №4, room №35, tel. 527-85-17) Coordinator – O. L. Kliachenko, candidate of biological sciences, associate professor

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines course according to the requirements of MES		
Civil defence	1	1,0
Labour protection in branch	1	1,0
Biological statistics	2	2,5
Methodology and organization of scientific researches	1	3,0
Applied genetics with cytology bases	2	4,0
Modeling and analysis of metabolic processes	1	1,0
Applied biotechnologies in AIC and biomethods in nature protection biotechnologies	1	3,0
Ecological biotechnologies	2	3,5
Plants biotechnology	2	4,0
Alternative energetics: bioenergetics and bioconversion in AIC	1	4,0
Information technologies	2	3,0
Applied ecology	2	4,0
Marketing of biotechnology products	2	3,0
Total		**36,0**
Disciplines course chosen by the university	2,3	**16,0**
Disciplines course chosen by students	2,3	**16,0**
State attestation		
Practice	1,2	9,0
Preparation and defence of master's paper	3	7,0
Total		**16,0**
Total		**90,0**

INDUSTRY-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	**Semester**	**Credits**
Methods of measure of environment parameters and instrumental methods of analysis	2	3,0
Agricultural radiobiology and radioecology	2	3,0
Bioprocesses projecting	2	5,0
Biosafety of biotechnological enterprises	3	2,0
Normative and legal provision (standardization and certification) of biotechnological enterprises, products, raw material and biofuel	2	3,0
Total		**16,0**

Master programme

NATURE PROTECTION BIOTECHNOLOGIES

Problems of nature protection by biotechnological methods, radiobiology, ecologic genetics, bio fuel production, use of waste-free technologies and technological processes in AIC.

Disciplines course chosen by students	**Semester**	**Credits**
Methods of neutralization of chemicalization means	3	3,0
Ecology of microorganisms	3	3,0
Ecological policy	2	2,0
Technologies of sewage disposal, utilization and neutralization of sewage	3	3,0
Management of waste allocation and utilization	3	2,0
Biotechnologies of agrosphere and production waste composting and substrate production	3	3,0
Total		**16,0**

Proposed topics for master's papers:

1. Nature protection biotechnologies of production and utilization of biotechnological products (agriculture, foodstuff, processing, pharmaceutical branches).
2. Eco biotechnologies of agricultural waste utilization.
3. Nature protection biotechnologies of sewage and sediment disposal.
4. Nature protection biotechnologies of fermentative enterprises (in fruit growing, gardening, viticulture and viniculture).
5. Nature protection biotechnologies in forestry, park-gardening and reserves science.

Master programme

HYDROECOLOGY AND WATER ECOSYSTEMS MONITORING

Master programme studies the problems of evaluation water ecosystems condition in connection with climatic factors and changes in these systems in the result of human activity, methods of water ecosystems organization and monitoring and obtained data analysis for decision making.

Disciplines course chosen by students	**Semester**	**Credits**
Natural and artificial water objects	2	4,0
Regulation of territories water supply.	2	4,0
Hydrotechnical structures at water objects	2	4,0
Water ecosystems monitoring	2	4,0
Total		**16,0**

Proposed topics for master's papers:

1. Analysis of subsoil waters dynamics in Irpin'-Trubizh zone of irrigation and melioration system (in districts).
2. Evaluation of technical and ecological condition of Bortnychi irrigation system hydro structures.
3. Determination of the conformity of calculation parameters of hydro structures according to the exploitation indices.
4. Study of the dynamics of subsoil waters resources and changes in different districts of Kyiv region.

Master programme

BIOLOGICAL AGROSYSTEMS PLANTS PROTECTION

The programme studies the problems of agroecosystems biological protection, morphological and biological peculiarities of flora and fauna harmful for agroecosystems, biotechnological production of biological means of plant protection and their safety use to regulate the amount of harmful organisms for obtaining ecologically safety plant products of high quality.

Disciplines course chosen by students	**Semester**	**Credits**
Theoretical principles of biological agro ecosystems protection	3	4,0
Biological protection of agro ecosystems from vermin and diseases, biocontrol	3	4,0
Biological agrosystems protection	3	4,0
Biotechnology of useful entomophages and evaluation of production quality	3	4,0
Total		**16,0**

Proposed topics for master's papers:

1. Substantiation of technological processes and choice of working regimes of equipment for growing and use of trichogram on maize plantations.
2. Substantiation of technological processes and choice of working regimes of equipment for growing and use of trichogram on energetic cultures.
3. Definition of regulative role of entomological preparations in maize protection from vermin.
4. Substantiation of biological measures of fruit plantations protections from Lepidoptera vermin.

RESEARCH- ORIENTED SPECIALIZATION

Disciplines course chosen by the university	**Semester**	**Credits**
Methods of measure of environment parameters and instrumental methods of analysis	2	3,0
Agricultural radiobiology and radioecology	2	3,0
Bioprocesses projecting	2	5,0
Biosafety of biotechnological enterprises	3	2,0
Normative and legal provision (standardization and certification) of biotechnological enterprises, products, raw material and biofuel	2	3,0
Total		**16,0**

Master programme

ALTERNATIVE ENERGETICS

The programme studies the problems of alternative energetics application in national economy, possibilities of mineral fuel replacement into alternative energy sources, qualitative indicators of biofuel (bio diesel, bio gas, granulated biofuel, etc), parameters and equipment working regimes in its production.

Disciplines course chosen by students	**Semester**	**Credits**
Technologies of bio diesel production in AIC	3	4,0
Technologies of bio gas production	3	4,0
Technologies of raw material production and processing for bioenergetics	3	4,0
Bioconversion of organic waste	3	4,0
Total		**16,0**

Proposed topics for master's papers:

1. Substantiation of constructive and technological scheme and choice of reactor for plant oil etherification in the unit for diesel biofuel production.
2. Substantiation of technological scheme and working regimes of equipment for plant oil production for energy purposes.
3. Substantiation of technologies and choice of equipment for biofuel briquetting.
4. Substantiation of technologies and choice of equipment for diesel biofuel production.

Master programme

DNA-PASSPORTIZATION AND GENOME MAPPING

The Master programme trains highly-qualified specialists-ecobiotechnologists who have proper knowledge in diagnostics and control genetically modified plants; main principles and regulations of quality provision, standardization system, plant products certification, its requirements, application to increase quality and competitiveness on domestic and foreign markets; biosafety criteria and indicators and evaluation methods of genetically modified organisms and products obtained from them.

Disciplines course chosen by students	**Semester**	**Credits**
Population genetics	3	4,0
Genetic engineering	3	3,0
Molecular virusology	3	3,0
GMO diagnostics and identification, DNA-passportization	3	3,0
Cell and molecular biology	3	3,0
Total		**16,0**

Proposed topics for master's papers:

1. Study of genetic diversity and biosphere and agrosphere biosafety.
2. Agricultural products and foodstuff genetic safety analysis.
3. Genetic marking of agricultural objects in plant growing, livestock raising, poultry industry, fish farming.
4. Genetic markers identification, their use in production and processing in agricultural products and raw material.
5. GMO standardization and certification.
6. DNA-passportization of AIC bioresources.

Master programme

BIOSAFETY AND BIOETHICS

Master students study fundamental principles and practical aspects of ecologisation of biotechnological industry; biosafety of finished products on AIC and leading directions of foodstuff industry; medical, genetic, ecological and social ethics in manipulation with cells (especially stem cells) and organs .

Disciplines course chosen by students	**Semester**	**Credits**
Microclone plant reproduction	3	3,0
In vitro technologies in plant growing	3	3,0
Biotechnolody biosafety	3	3,0
Immune biotechnology	3	3,0
Biology of individual development	3	2,0
Resistance cell selection	3	2,0
Total		**16,0**

Proposed topics for master's papers:

1. Evaluation and diagnostics of agrosystem bio resources .
2. Biosafety of water and surface organisms of agrosphere ecosystems.
3. Bioethic aspects of scientific researches.
4. Standardization and certification of biodiversity in biosphere.
5. GMO phytocenosis biosafety.

MASTER PROGRAMMES OF TECHNICAL EDUCATION AND SCIENTIFIC INSTITUTE

Technical educational and scientific is involved in educational, research, innovative, methodical, production, information and extension and educative activities to obtain higher education, qualification and specialities in the direction “Engineering mechanics”, “Processes, machinery and equipment of agroindustrial production”, “Transport technologies (according to the transport means)” and specialities of this directions aimed at the development and extension of up-to-date resource-saving agrotechnologies, machinery and equipment of agricultural production and forestry complex, mechanization of agriculture, transportation organization and management in automobile transport and traffic organization and regulation.

Faculties which provide Master training:

Faculty of construction and design of machinery and agricultural and forestry equipment

It organizes and coordinates training of specialists who have qualification in construction of machinery and agricultural and forestry equipment and provide cultural and education work among students.

Mechanical and technological faculty

It organizes and coordinates training of specialists who have qualification in agriculture mechanization, machinery maintenance and service transportation organization and traffic organization and regulation and provide cultural and education work among students.

The Master training and education process at the technical educational and scientific institute envisages production and research specialization in all specialities. This enables graduates to work at agricultural enterprises, in scientific and research, construction, machine building and agricultural organizations in research, design, production and use of agricultural machinery and transportation of agricultural loads by automobile transport or continue their study at post graduate course. The Bachelors have the possibility to continue their study in specialities of the directions "Specific categories", "Pedagogics of higher school", "Quality, standardization and certification", "Business administration" and in speciality "State service" of the direction "State administration".

Centers of practical training SD of NULES ″Agronomy Research Station″; SD of NULES ″Velyka Snitynka TRF named after O.V. Muzychenko″; TRF „Vorzel'", Boiarka forestry research station, plant „Kyivtractorodetal'"; joint-stock company „Boreks", plant „Kovel'cil'mash", Shepetivka plant of agricultural machinery, Ternopil' combine plant, plant „Khmel'nyksil'mash", National scientific centre „Institute of mechanization and electrification of agriculture of UAAS", Ukrainian research institute of machinery forecast and testing, named after L. Pogorilyi, "AGKO Corporation"; "AMAKO Firm"; Representative office of the "CLAAS Firm" in Ukraine; "Ukragroleasing"; Joint-Stock Company "Ukravtozapchastyna"; Production-Leasing Company "Ukragropostach"; ZAC "Ukragrocom"; OJSC of "Braclav"; "Agrosystema" Ltd.; OJSC of Nonohrad-Volynsksilmash"; STOV "Mayak"; "Agrosvit", etc..

The faculty cooperates with leading foreign higher institutions of Europe and the USA: Dresden technical university and Institute of agricultural machinery of Bonn university (Germany), Institute of construction, mechanization and electrification of agriculture in Warsaw, Industrial institute of agricultural machinery (Poznan'), Lublin agricultural academy (Poland), Hungarian Institute of agricultural machinery, Institute of agricultural machinery (VUZT, Prague, Check republic), Lithuanian agricultural university, Universities of Iowa, Minnesota, Louisiana state universities and Purdue University (USA), AMAKO corporation, AGCO Ltd. (USA), CLAAS ACADEMY (Germany).

The institute cooperates with AGCO corporation (USA) in precise farming to optimize mechanized technologies of agricultural production.

Every year two students from technical institute study at Dresden technical university. The university has already trained 33 specialists. Cooperation with CLAAS corporation (Germany) is aimed at modernization of training process and teaching methods of disciplines in current agricultural machinery.

Master students study at the university of applied sciences about life (Austria), Tokyo university (Japan). Students have practical training at the university of applied sciences (Weihenschtephan, Germany).

Specialities:

8.090215 – „Machinery and equipment of agricultural production";
8.090219 – „Equipment of forestry complex";
8.091902 – „Mechanization of agriculture";
8.100401 – „Traffic organization and regulation";

8.100403 – „ Transportation organization and management in automobile transport".

Qualification of Master graduates according to the state classificator of professions of Ukraine:

In speciality 8.090215 „ Machinery and equipment of agricultural production*"* 2149.2 – engineer-designer of machinery and equipment of agricultural production;

In speciality 8.090219 „ Equipment of forestry complex *"* engineer-mechanic of equipment of forestry (according to the curriculum approved by MES of Ukraine);

In speciality 8.091902 Mechanization of agriculture *"* 2145.1 – engineer-researcher in mechanization of agriculture (for production-oriented and industry-oriented specializations);

In speciality 8.100401 „ Traffic organization and regulation *"* 2149.1 – scientific officer (in transport) and can occupy initial positions in code CP 2149.2 – engineer in transport, controller-instructor of traffic service, engineer in machinery management and maintenance;

In speciality 8.100403 „ Transportation organization and management in automobile transport*"* 2149.1 – scientific officer (in transport) and can occupy initial positions in code CP 2149.2 – engineer in transport, controller-instructor of traffic service, engineer in machinery management and maintenance.

Master graduates can be employed at agricultural enterprises, forestry and automobile transport enterprises of different forms of ownership, state quarantine service, scientific and research institutions of NAS of Ukraine and UAAS, national parks and reserves, regional and district agricultural authorities, leading agroindustrial enterprises, etc.

SPECIALITY
8.090215 „ MACHINERY AND EQUIPMENT OF AGRICULTURAL PRODUCTION”

Master programme of industry-oriented specialization

AIC machinery operating parts	ITSC of machinery construction and reliability for agricultural, forestry and water industry and foodstuff technologies (educational building №11, room № 218, tel. 527-81-85) Coordinator – S. F. Pylypaka, doctor of tecnical sciences, professor tel.: 527-81-85

Master programme of research-oriented specialization

AIC equipment, machinery and mechanisms dynamics	ITSC of machinery construction and reliability for agricultural, forestry and water industry and foodstuff technologies (educational building №11, room № 218, tel. 527-81-85) Coordinator – S. F. Pylypaka, doctor of tecnical sciences, professor tel.: 527-81-85

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines course according to the requirements of MES		
Systems of automized projecting	2	3,0
Electric equipment and automation means	1	3,0
Theory of projecting and machinery design	1	13,0
Applied computer technologies	1	4,0
Measuring devices and methods of measure	1	3,0
Analysis of technological systems	1	3,0
Economy of agricultural enterprises	1	2,0
Engineering management	1	2,0
Total		**33,0**
Disciplines course chosen by the university	1,2,3	**21,0**
Disciplines course chosen by students	2,3	**14,0**
State attestation		
Practice	1,2	10,0
Preparation and defence of master's paper	3	5,0
Total		**15,0**
Total		**90,0**

INDUSTRY- ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
Methods of agricultural machinery design	3	3,0
Reliability of agricultural machinery	1	4,0
Testing and certification of agricultural machinery	3	3,0
Projecting of mechanic and technological lines of livestock enterprises	3	3,0
Projecting of machinery for storage and processing of agricultural products	3	3,0
Construction mechanics of structures	2	5,0
Total		**21,0**

Master programme

AIC MACHINERY OPERATING PARTS

Elaboration of construction and substantiation of machinery operating parts and analysis of their condition, development of restoration technologies of operating parts and methods of their mechanical qualities determination.

Disciplines course chosen by students	**Semester**	**Credits**
Machinery dynamics	3	3,0
Design of vibration machinery	2	3,0
Design of machinery operating parts	3	2,0
Mechanics of environment	2	2,0
Current technologies of fish products production	3	2,0
Current technologies of bee-keeping products production	3	2,0
Total		**14,0**

Proposed topics for master's papers:

1. Elaboration of construction and substantiation of rod-shaped conveyer of beet-harvesting machines parameters.
2. Evaluation and reliability provision of machinery operating parts with the development of their restoration technology.
3. Elaboration of methods and equipment to define mechanical qualities of materials and surroundings.

RESEARCH- ORIENTED SPECIALIZATION

Disciplines course chosen by the university	**Semester**	**Credits**
Testing and certification of agricultural machinery	3	3,0
Current experimental methods of agricultural machinery researches	3	3,0
Dynamics of technical systems	3	4,0
Optimization of technical systems structures	1	3,0
Reliabilities of technological systems	2	4,0
Construction mechanics of structures	2	5,0
Total		**22,0**

Master programme

AIC EQUIPMENT, MACHINERY AND MECHANISMS DYNAMICS

Research of agricultural machinery and equipment dynamics, structural analysis and their reliability provision, research and substantiation of parameters and regimes of machinery operation on the whole.

Disciplines course chosen by students	**Semester**	**Credits**
Mathematical modeling of technological processes	3	2,0
Current methods of agricultural machinery design	3	3,0
Vibration processes in engineering and technologies	3	2,0
Mechanics of contact interaction of operating parts with agricultural materials	3	3,0
Mechatronics	3	3,0
Total		**13,0**

Proposed topics for master's papers:

1. Research and substantiation of parameters and operating parts which interact with surroundings materials.
2. Structural analysis and reliability provision of machinery.
3. Research of nanometals in AIC to use them for biological objects.
4. Research and substantiation of parameters and operating parts of vibrating machines which interact with surroundings materials.

SPECIALITY
8.090219 „FORESTRY COMPLEX EQUIPMENT”

Master programme of industry-oriented specialization

Forestry complex equipment operating parts	ITSC of machinery construction and reliability for agricultural, forestry and water industry and foodstuff technologies (educational building №11, room № 218, tel. 527-81-85) Coordinator – S. F. Pylypaka, doctor of tecnical sciences, professor tel.: 527-81-85

Master programme of research-oriented specialization

Forestry complex equipment, machinery and mechanisms dynamics	ITSC of machinery construction and reliability for agricultural, forestry and water industry and foodstuff technologies (educational building №11, room № 218, tel. 527-81-85) Coordinator – S. F. Pylypaka, doctor of technical sciences, professor tel.: 527-81-85

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines course according to the requirements of MES		
Systems of automized projecting of forestry complex	2	5,0
Reliability of forestry complex equipment	1	3,0
Electric equipment and automation means of forestry complex equipment	1	3,0
Theory of projecting and forestry complex equipment design	1	13,0
Applied computer technologies of forestry complex equipment	1	4,0
Measuring devices and methods of measure	1	2,0
Analysis of technological systems	1	3,0
Economy of forestry complex enterprises	1	2,0
Engineering management	1	3,0
Total		**38,0**
Disciplines course chosen by the university	2,3	**17,0**
Disciplines course chosen by students	2,3	**13,0**
State attestation		
Practice	1,2	10,0
Preparation and defence of master's paper	3	5,0
Total		**15,0**
Total		**90,0**

INDUSTRY- ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
Methods of design of forestry complex equipment	3	3,0
Theory and design of self-propelled forestry machines	2,3	4,0
Testing and certification of complex equipment	3	3,0
Design of wood processing equipment	2	3,0
Dynamics of forestry complex	3	4,0
Total		**17,0**

Master programme

FORESTRY COMPLEX OPERATING PARTS

Elaboration of constructions and substantiation of forestry complex operating parts and analysis of their condition, evaluation and reliability provision of operating parts of forestry complex, development of forestry complex enterprises.

Disciplines course chosen by students	**Semester**	**Credits**
forestry complex operating parts design	2,3	4,0
Mechanics of surroundings and timber	3	3,0
Design of vibration forestry complex equipment	3	3,0
Projecting of forestry complex enterprises	3	3,0
Total		**13,0**

Proposed topics for master's papers:

1. Elaboration of construction and substantiation of machines parameters and forestry complex equipment.
2. Elaboration of machines parameters and operation parts of vibration machines.
3. Evaluation and reliability provision of machinery operating parts of forestry complex equipment.
4. Development of forestry complex enterprises.

RESEARCH- ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
Testing and certification of forestry complex equipment	3	3,0
Current experimental methods of researches of forestry complex equipment	3	3,0
Optimization of structures of wood-processing equipment	2	2,0
Dynamics of technical systems of forestry complex equipment	3	3,0
Reliabilities of forestry complex equipment as technological systems	2	3,0
Mechatronics of forestry complex equipment	2	2,0
Total		**16,0**

Master programme

FORESTRY COMPLEX EQUIPMENT, MACHINERY AND MECHANISMS DYNAMICS

Research of forestry complex equipment, machinery and mechanisms dynamics, machinery structural analysis and their reliability provision, optimization of forestry complex enterprises.

Disciplines course chosen by students	Semester	Credits
Mathematical modeling of technological processes in of forestry complex equipment	3	2,0
Current methods of forestry complex equipment design and technologies	3	3,0
Optimization of forestry complex enterprises	3	3,0
Mechanics of contact interaction of operating parts with timber	3	2,0
Vibration processes in of forestry complex equipment and technologies	3	4,0
Total		**14,0**

Proposed topics for master's papers:

1. Substantiation of constructive parameters and machinery motion regimes.
2. Structural analysis and machinery reliability provision.
3. Research of nanometals in of forestry complex equipment.
4. Optimization of forestry complex enterprises.

SPECIALITY
8.091902 „MECHANIZATION OF AGRICULTURE”

Master programme of industry-oriented specialization

Adaptive progressive technologies and machinery in plant growing	ITSC of engineering and technical provision agricultural production, AIC products storage and processing (educational building №11, room №346, tel. 527-88-53) Coordinator – V. D. Voitiuk, candidate of technical sciences, associate professor tel.: 527-88-53
Adaptive progressive technologies and machinery in livestock raising	ITSC of engineering and technical provision agricultural production, AIC products storage and processing (educational building №11, room №346, tel. 527-88-53) Coordinator – V. D. Voitiuk, candidate of technical sciences, associate professor tel.: 527-88-53
Adaptive progressive technologies and machinery of processing enterprises	ITSC of engineering and technical provision agricultural production, AIC products storage and processing (educational building №11, room №346, tel. 527-88-53) Coordinator – V. D. Voitiuk, candidate of technical sciences, associate professor tel.: 527-88-53
Labour protection and engineering and ecological principles of agricultural production	ITSC of agricultural machinery, its standardization, certification and service (educational building №11, room №314, tel. 527-82-15) Coordinator – O. V. Boinalovych, candidate of technical sciences, associate professor tel.: 527-82-99

Master programme of research-oriented specialization

Company service and AIC machinery certification	ITSC of engineering and technical provision agricultural production, AIC products storage and processing (educational building №11, room №346, tel. 527-88-53) Coordinator – V. D. Voitiuk, candidate of technical sciences, associate professor tel.: 527-88-53
Substantiation of agricultural machinery operation processes	ITSC of agricultural machinery, its standardization, certification and service (educational building №11, room №314, tel. 527-82-15) Coordinator – G. V. Shkarivs'kyi, candidate of technical sciences, associate professor tel.: 527-82-99
Optimization or parameters of AIC machinery operation regimes	ITSC of machinery construction and reliability for agricultural, forestry and water industry and foodstuff technologies (educational building №11, room № 218, tel. 527-81-85) Coordinator – S. F. Pylypaka, doctor of technical sciences, professor tel.: 527-81-85
Systems and processes of combustion engines	ITSC of agricultural machinery, its standardization, certification and service (educational building №11, room №314, tel. 527-82-15) Coordinator – G. V. Shkarivs'kyi, candidate of technical sciences, associate professor tel.: 527-82-99

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land and environmental law	1	1,0
Business foreign language	1	1,5
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Total		**7,0**
Compulsory disciplines course according to the requirements of MES		
Labour ecology	1	1,0
Stock market	1	1,0
Pedagogics	2	2,0
Engineering psychology	2	2,0
Applied computer technologies	1	2,0
Agrarian service and information support	1	1,0
Theory and technology of scientific researches	1	2,0
Analysis of technological systems	1	1,0
System of precise agriculture	1	2,0
Geoinformation systems	2	1,0
Theory and technological restoration of machines operability	2	2,0
Civil defence	2	1,0
AIC energy supply	2	2,0
Technological systems reliability	2	1,0
Engineering management	2	2,0
Transportation process in AIC	2	2,0
Agricultural melioration	2	1,0
Modeling of technological processes and systems	2	2,0
Labour protection	2	2,0
Total		**30,0**
Disciplines course chosen by the university	3	**20,0**

Disciplines course chosen by students	3	**10,0**
State attestation		
Practice	1,2	14,0
Preparation and defence of master's paper	3	9,0
Total		**23,0**
Total		**90,0**

INDUSTRY- ORIENTED SPECIALIZATION

Master programme

ADAPTIVE PROGRESSIVE TECHNOLOGIES AND MACHINERY IN PLANT GROWING

Optimization of complexes of machines and equipment, projecting of technological processes of crops growing, projecting and organization of service enterprises activity.

Disciplines course chosen by the university	**Semester**	**Credits**
Plant products production technology	3	5,0
Machinery operation in plant growing	3	5,0
Machines diagnostics and inspections in plant growing	3	4,0
Maintenance of agricultural machines and tools	3	4,0
Projecting of technological processes in plant growing	3	5,0
Total		**23,0**
Disciplines course chosen by students		
Automation of technological systems	3	2,5
Technical aspects of ecological safety of AIC products production	3	2,5
Project analysis	3	2,0
Total		**7,0**

Proposed topics for master's papers:

1. Projecting of technological processes of crops growing
2. Service enterprises projecting and organization.
3. Optimization of machinery complexes for agricultural products production.
4. Optimization of machinery complexes and equipment for machines inspection.

Master programme

ADAPTIVE PROGRESSIVE TECHNOLOGIES AND MACHINERY IN LIVESTOCK RAISING

Projecting and optimization of technological processes and machinery in livestock raising.

Disciplines course chosen by the university	**Semester**	**Credits**
Livestock products production technology	3	5,0
Machinery operation in livestock raising	3	5,0
Machines diagnostics and inspections in livestock raising	3	4,0
Maintenance of agricultural machines and tools	3	4,0
Projecting of technological processes in livestock production	3	5,0
Total		**23,0**
Disciplines course chosen by students		
Automation of technological systems	3	2,5
Technical aspects of ecological safety of AIC products production	3	2,5
Project analysis	3	2,0
Total		**7,0**

Proposed topics for master's papers:

1. Projecting of technological processes in livestock raising.
2. Optimization of machinery complexes for cattle farms.

Master programme

ADAPTIVE PROGRESSIVE TECHNOLOGIES AND MACHINERY OF PROCESSING ENTERPRISES

Design of machines processes and special equipment for processing and storage of agricultural production, optimization of machines complexes and equipment of processing enterprises technological lines.

Disciplines course chosen by the university	**Semester**	**Credits**
Agricultural products processing technology	3	5,0
Machinery and equipment operation in processing	3	5,0
Machines diagnostics and inspections processing enterprises	3	4,0
Maintenance of equipment of processing enterprises	3	4,0
Projecting of technological processes of processing enterprises	3	5,0
Total		**23,0**
Disciplines course chosen by students		
Automation of technological systems	3	2,5
Technical aspects of ecological safety of AIC products production	3	2,5
Project analysis	3	2,0
Total		**7,0**

Proposed topics for master's papers:

1. Design of machines processes and special equipment for processing and storage of agricultural production.
2. Optimization of machines complexes and equipment for technological lines.

Master programme

LABOUR PROTECTION AND ENGINEERING AND ECOLOGICAL PRINCIPLES OF AGRICULTURAL PRODUCTION

The development of labour protection management systems, energy and resources saving and engineering means to prevent negative effect of production processes in AIC on environment, substantiation of parameters of technical accident preventatives to improve labour conditions.

Disciplines course chosen by the university	**Semester**	**Credits**
Theory of safety	3	5,0
Organization of labour protection in AIC	3	5,0
Production sanitation and labour hygiene	3	5,0
Production processes safety in AIC	3	5,0
Total		**20,0**
Disciplines course chosen by students		
System analysis and modeling of dangerous situations in AIC	3	4,0
Ergonomics of jobs in AIC	3	3,0
Technical aspects of products ecological safety in AIC production.	3	3,0
Total		**10,0**

Proposed topics for master's papers:

1. The development of labour protection management systems in AIC.
2. Substantiation of parameters of technical accident preventatives to improve labour conditions.
3. The development energy and resources saving and engineering means to prevent negative effect of production processes in AIC.

RESEARCH- ORIENTED SPECIALIZATION

Master programme

COMPANY SERVICE AND AIC MACHINERY CERTIFICATION

Organization of technical service stations, investigation of machinery failures in AIC, optimization of technical service systems of machines and equipment.

Disciplines course chosen by the university	**Semester**	**Credits**
Diagnostics and forecast of machines technical condition	3	5,5
Technological projecting of maintenance and service enterprises	3	5,0
Organization of technical service enterprises activity	3	5,5
Testing of agricultural machinery	3	4,0
Total		**20,0**
Disciplines course chosen by students		
Standardization and certification of machinery and equipment	3	4,0
System analysis and management in AIC	3	3,0
Optimization of production processes and theory of decision making	3	3,0
Total		**10,0**

Proposed topics for master's papers:

1. Organization of technical service stations activity of current machines.
2. Investigation of machinery failures.
3. Optimization of technical service systems of machines and equipment.

Master programme

SUBSTANTIATION OF AGRICULTURAL MACHINERY OPERATION PROCESSES

Research, development and improvement of agricultural machinery operation processes.

Disciplines course chosen by the university	**Semester**	**Credits**
Theory of agricultural machinery processes and operating parts	3	5,5
Modeling of operation processes of agricultural machinery	3	5,5
Methods of measures in investigation of agricultural machinery operation processes	3	5,0
Testing of agricultural machinery	3	4,0
Total		**20,0**
Disciplines course chosen by students		
Methods of projecting and forecast of agricultural machinery resource	3	4,0
System analysis and management in AIC	3	3,0
Optimization of production processes and theory of decision making	3	3,0
Total		**10,0**

Proposed topics for master's papers:

1. Investigation of operation processes, operating parts and regimes of agricultural machinery.
2. Development and improvement of hydro and pneumatic gears of agricultural machinery.

Master programme

OPTIMIZATION OR PARAMETERS OF AIC MACHINERY OPERATION REGIMES

Increase of agricultural machinery reliability on the base of structural analysis of their safety margin with the development of their restoration technology.

Disciplines course chosen by the university	**Semester**	**Credits**
Testing of agricultural machinery	3	4,0
Mechanics of tensed and deformed state of machine structure elements	3	4,0
Mechanics of agricultural material	3	4,5
Applied dynamics of machinery and mechatronic methods of control	3	4,5
System analysis and management in AIC	3	3,0
Total		**20,0**
Disciplines course chosen by students		
System methods of calculation and design of machinery	3	4,0
Biomechanics	3	3,0
Optimization of production processes and theory of decision making	3	3,0
Total		**10,0**

Proposed topics for master's papers:

1. Increase of agricultural machinery reliability on the base of structural analysis of their safety margin with the development of their restoration technology.
2. Evaluation and agricultural machinery reliability provision as repaired systems.
3. Substantiation of organization parameters and development of technological processes of agricultural machinery parts restoration.

Master programme

SYSTEMS AND PROCESSES OF COMBUSTION ENGINES

Development and examination of combustion engines mechanisms and systems, research of engines operation processes, development of auto tractor engines feeding using alternative fuels.

Disciplines course chosen by the university	**Semester**	**Credits**
Theory of combustion engines	3	5,5
Frequency methods in tractors and automobiles theory	3	5,5
Methods of CE researches and characteristics	3	5,0
Testing of agricultural machinery	3	4,0
Total		**20,0**
Disciplines course chosen by students		
Projecting and modeling of CE operation processes	3	4,0
System analysis and management in AIC	3	3,0
Optimization of production processes and theory of decision making	3	3,0
Total		**10,0**

Proposed topics for master's papers:

1. Research of operation process of auto tractor engines.
2. Ecological aspects of the development of perspective engines feeding systems.
3. Development and examination of gas distribution mechanisms with electronic control.
4. Development of engines feeding systems using alternative fuels.

SPECIALITY
8.100401 „TRAFFIC ORGANIZATION AND REGULATION”

Master programme of research-oriented specialization

Innovation technologies of traffic projecting	ITSC of engineering and technical provision agricultural production, AIC products storage and processing (educational building №11, room №346, tel. 527-88-53) Coordinator – V. D. Voitiuk, candidate of technical sciences, associate professor tel.: 527-88-53

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	3,0
Agricultural, land and environmental law	1	2,0
World agriculture and food resources	1	3,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	2,0
Strategy of stable nature development and society	1	3,0
Total		**13,0**
Compulsory disciplines course according to the requirements of MES		
Business foreign language	1	4,0
Foreign language of scientific communication	1	4,0
Physical training	1	1,0
Civil defence	2	1,0
Project analysis	2	4,0
Methods of scientific researches	3	6,0
Special methods of traffic organization	2	4,0
Transport projecting of cities and towns	2	5,0
Automized systems of traffic control	3	3,0
Economics of traffic organization	3	3,0
Labour protection in the branch	3	1,0
Total		**36,0**
Disciplines course chosen by the university	1,2,3	**17,0**
Disciplines course chosen by students	1	**4,0**
State attestation		
Practice	1,2	10,0
Preparation and defence of master's paper	3	10,0
Total		**20,0**
Total		**90,0**

INDUSTRY- ORIENTED SPECIALIZATION

Master programme

INNOVATION TECHNOLOGIES OF TRAFFIC PROJECTING

Elaboration of methods of improvement of operation regimes in existing transports systems taking into account safety, traffic efficiency and its effects on environment (with reference to rural conditions).

Disciplines course chosen by the university	**Semester**	**Credits**
Sanitation and hygiene of transport means	1	3,0
Shipment of AIC	1	4,0
Machinery quality management	2	4,0
Control and expertise of transport means	3	4,0
Transport projecting of rural settlements	3	2,0
Total		**17,0**
Disciplines course chosen by students		
Management under risks and resources deficit conditions	1	2,0
Theory of decision making under ecological and economic restrictions	1	2,0
Total		**4,0**

Proposed topics for master's papers:

1. Elaboration of methods and means of organization and traffic safety improvement on streets.
2. Improvement of traffic organization in automobile cargo transportations.
3. Improvement of traffic organization schemes in agricultural cargo transportations.

SPECIALITY
8.100403 „ORGANIZATION AND MANAGEMENT OF TRANSPORTATION (AUTOMOBILE)”

Master programme of industry-oriented specialization

Management of automobile transportation of agricultural production under economic and ecological restrictions	ITSC of engineering and technical provision of agricultural production, AIC products storage and processing (educational building №11, room №346, tel. 527-88-53) Coordinator – V. D. Voitiuk, candidate of technical sciences, associate professor tel.: 527-88-53

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	3,0
Agricultural, land and environmental law	1	2,0
World agriculture and food resources	1	3,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	2,0
Strategy of stable nature development and society	1	3,0
Total		**13,0**
Compulsory disciplines course according to the requirements of MES		
Business foreign language	1	4,0
Foreign language of scientific communication	1	4,0
Physical training	1	1,0
Civil defence	2	1,0
Project analysis	2	4,0
Methods of scientific researches	3	6,0
Management of supply chain	2	3,0
Transport and forwarding activity	2	6,0
Economics of transport	3	3,0
Labour protection in the branch	3	1,0
Total		**33,0**
Disciplines course chosen by the university	1,2,3	**16,0**
Disciplines course chosen by students	1,2	**8,0**
State attestation		
Practice	1,2	10,0
Preparation and defence of master's paper	3	10,0
Total		**20,0**
Total		**90,0**

INDUSTRY- ORIENTED SPECIALIZATION

Master programme

MANAGEMENT OF AUTOMOBILE TRANSPORTATION OF AGRICULTURAL PRODUCTION UNDER ECONOMIC AND ECOLOGICAL RESTRICTION

Development of technologies of automobile transportation by auto and tractor means and loading and unloading in agricultural products production.

Disciplines course chosen by the university	**Semester**	**Credits**
Roads of inner-economy purpose	1	2,0
Cargos of AIC	2	3,0
Sanitation and hygiene of transport means	1	3,0
Planning of technical service of transport means	3	4,0
Transport navigation systems	1	2,0
Recycling of auto transport means	3	2,0
Total		**16,0**
Disciplines course chosen by the students		
Management under risks and resources deficit conditions	1	2,0
Theory of decision making under ecological and economic restrictions	1	2,0
Machinery quality management	2	4,0
Total		**8,0**

Proposed topics for master's papers:

1. Improvement of automobile transportation organization in plant products production.
2. Improvement of automobile transportation organization in livestock products production.

MASTER PROGRAMMES
EDUCATION AND SCIENTIFIC INSTITUTE
OF POWER ENGINEERING AND AUTOMATICS

Educational and scientific institute of power engineering and automatics is involved in educational, research, innovative, methodical, production, information and extension and educative activities to obtain higher education, qualification and specialities in the direction “Automation and computer integrated technologies”, “Electrical engineering”, “Mechanization and electrification of agriculture” and specialities of these directions aimed at solution of current problems of technical sciences, the development and extension of up-to-date resource-saving technologies in power engineering and automation in AIC.

Faculties which provide Master training:

Faculty of power engineering and automatics

It organizes and coordinates training of specialists who have qualification in current technologies of production and provide cultural and education work among students.

The Master training and education process at the educational and scientific institute envisages production and research specialization in all specialities. This enables graduates to occupy the position of a manager or a specialist of division of research, design, assembling, installation, operation and maintenance of an electric gears, electrical equipment, automized control means and systems of technological processes in agriculture or continue their study at post graduate course. The Bachelors have the possibility to continue their study in specialities of the directions “Specific categories”, “Pedagogics of higher school”, “Quality, standardization and certification”, “Business administration” and in speciality “State service” of the direction “State administration”.

Centers of practical training SD of NULES ″Agronomy Research Station″; SD of NULES ″Velyka Snitynka TRF named after O.V. Muzychenko″; corporation „Myronivka hliboproduct”; Kyiv poultry plant; ltd „Ruby Rose Agricol” Moroziv poultry plant; poultry plant „Agromars”; Vasyl’kiv poultry plant; National energetic corporation „Ukrenergo”; Ukrainian scientific and research and projecting institute „USRI Promtsyvil’cil’bud”; Training and research pedigree poultry plant named after Frunze; corporation „Kyivsil’electgro”; corporation „Kalyta”; corporation „Odessa oil and fat

industrial complex"; corporation „Cherkasyoblenergo"; Kaniv HES; Kyiv HES; Institute „Ukrsil'energo"; corporation „ „Zhytomyroblenergo"; AEC „Kyivenergo"; CEH-3; CEH-5.

The faculty cooperates with leading foreign higher institutions.

International activity of the institute is aimed at improvement of Ukrainian engineering education and science in agricultural production, organization of students training, institute teachers and graduates training at foreign educational and scientific institutions.

The institute cooperates with Iowa, Minnesota, Louisiana, Pennsylvania, Illinois, Indiana, Georgia and Nebraska state universities, (USA), Dresden technical university and Institute of agricultural machinery of Bonn university (Germany), Institute of construction, mechanization and electrification of agriculture in Warsaw,) Humboldt university (Germany), centre of applied researches of polytechnic institute (Mexico), Malaga university (Spain), Warsaw polytechnics (Plotsk), institute of agricultural machinery (Prague), Hungarian institute of agricultural machinery (Godolio), Austrian university of agriculture (Viena), Lublin agricultural academy (Poland), Higher agricultural school (Nitra, Slovakia) etc.

The institute students have practical training on farms of England, Gernamy, Belgium, France, Denmark, USA, etc.

Specialities:

8.092501 – „Automatized control of technological processes";
8.090603 – „Electrotechnical systems of power supply";
8.091901 – „Power engineering of agricultural production";
8.091903 – „Electrification and automaton of agriculture".

Qualification of Master graduates according to the state classificator of professions of Ukraine:

In speciality 8.092501 „ Automatized control of technological processes " 2131.1 – engineer-researcher in computer systems and automation, 2131.2 – Masters in automatized control of technological processes, 2131.2 – engineer in automatized production control systems;

In speciality 8.090603 „ Electrotechnical systems of power supply " 2143.1 – scientific officer, 2131.2 – Master of electrotechnical systems of power supply, 2143.2 – expert in electrical engineering;

In speciality 8.091901 „ Power engineering of agricultural production" 2143.1 – engineer-researcher in power engineering of agriculture, 2143.2 – power engineering specialist;

In speciality 8.091903 „ Electrification and automaton of agriculture" 2143.1 – engineer-researcher, 2143.2 – engineer in electrification and automaton of agriculture.

Master graduates can be employed at agroindustrial power engineering complexes according to the speciality, enterprises of different forms of ownership, scientific and research institutions of NAS of Ukraine and UAAS.

SPECIALITY
8.092501 „ AUTOMATIZED CONTROL OF TECHNOLOGICAL PROCESSES”

Master programme of industry-oriented specialization

Computer and integrated control systems in poultry industry	TSC of automatics and information control systems (educational building 11, room 327, tel. (044) 527-87-44 Coordinator - V. M. Reshetiuk, candidate of technical sciences, associate professor
Computer and integrated control systems at milk production and pre-processing enterprises	TSC of automatics and information control systems (educational building 11, room 327, tel. (044) 527-87-44 Coordinator - V. M. Reshetiuk, candidate of technical sciences, associate professor
Computer and integrated control systems in pig raising	TSC of automatics and information control systems (educational building 11, room 327, tel. (044) 527-87-44 Coordinator - V. M. Reshetiuk, candidate of technical sciences, associate professor
Computer and integrated control systems in elevator industry	TSC of automatics and information control systems (educational building 11, room 327, tel. (044) 527-87-44 Coordinator - V. M. Reshetiuk, candidate of technical sciences, associate professor
Computer and integrated control systems in greenhouse industry	TSC of automatics and information control systems (educational building 11, room 327, tel. (044) 527-87-44 Coordinator - V. M. Reshetiuk, candidate of technical sciences, associate professor

Computer and integrated control systems in agricultural production storage and processing	TSC of automatics and information control systems (educational building 11, room 327, tel. (044) 527-87-44 Coordinator - V. M. Reshetiuk, candidate of technical sciences, associate professor

Master programme of research-oriented specialization

Energy efficient control systems of biotechnical objects	TSC of automatics and information control systems (educational building 11, room 327, tel. (044) 527-87-44 Coordinator - V. M. Reshetiuk, candidate of technical sciences, associate professor

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Total		**4,0**
Compulsory disciplines course according to the requirements of MES		
Automatized registration of power and material resources	1	3,0
Computer and modeling control systems in AIC	2	3,0
Automation of technological processes	1	3,0
ACS TP in AIC	2	3,0
CAD of AIC automation systems	2	3,0
Assembling, installation and operation of automatics systems	1	3,0
Principles of engineering activity	2	2,5
Labour protection in the branch	2	3,0
Scientific research technology	2	2,5
Special sections of higher mathematics	1	3,0
Calculation of economic efficiency of economic researches	3	2,5
Business foreign language	1	3,0
Philosophy of science and innovation development	1	3,0
Total		**38,0**
Disciplines course chosen by the university	2,3	**18,5**
Disciplines course chosen by students	3	**13,5**
State attestation		
Practice	1,2	10,0
Preparation and defence of master's paper	3	6,0
Total		**16,0**
Total		**90,0**

INDUSTRY- ORIENTED SPECIALIZATION

Master programme

COMPUTER AND INTEGRATED CONTROL SYSTEMS IN POULTRY INDUSTRY

Research, development and extension of current computer integrated control systems in poultry industry. Technology and mathematic modeling of technological processes in poultry industry, automatized control systems of technological processes in poultry industry.

Disciplines course chosen by the university	**Semester**	**Credits**
Object oriented programming	3	4,5
Information technologies	3	4,0
Typical technological objects and processes in poultry industry	2	5,0
Modeling of biotechnical objects in poultry industry	2	5,0
Total		**18,5**
Disciplines course chosen by the students		
Methods and means of current automatized control of technological processes	3	3,5
Technical automatics devices and equipment of automatized control systems	3	4,0
According to the topic of master's paper (one discipline is chosen)		
Systems and database management technologies	3	6,0
Computer integrated control systems	3	6,0
Optimum systems of automatized control	3	6,0
Total		**13,5**

Proposed topics for master's papers:

1. Optimal SAR of air temperature in incubator.
2. Computer integrated SAR of temperature regime in industrial aviary.
3. Elaboration of database of poultry products registration

Master programme

COMPUTER AND INTEGRATED CONTROL SYSTEMS AT MILK PRODUCTION AND PRE-PROCESSING ENTERPRISES

Research, development and extension of current computer integrated control systems at milk production and pre-processing enterprises. Technology and mathematic modeling of technological processes at milk production and pre-processing enterprises, automatized control systems of technological processes at milk production and pre-processing enterprises.

Disciplines course chosen by the university	**Semester**	**Credits**
Object oriented programming	3	4,5
Information technologies	3	4,0
Typical technological objects and processes at milk production and pre-processing enterprises	2	5,0
Modeling of biotechnical objects at milk production and pre-processing enterprises	2	5,0
Total		**18,5**
Disciplines course chosen by the students		
Methods and means of current automatized control of technological processes	3	3,5
Technical automatics devices and equipment of automatized control systems	3	4,0
According to the topic of master's paper (one discipline is chosen)		
Systems and database management technologies	3	6,0
Computer integrated control systems	3	6,0
Optimum systems of automatized control	3	6,0
Total		**13,5**

Proposed topics for master's papers:

1. Optimal SAR of air temperature in cowshed
2. Computer integrated SAR of dairy products packing.
3. SAR improvement of milk pasteurization process using computer integrated technologies.

COMPUTER AND INTEGRATED CONTROL SYSTEMS IN PIG RAISING

Research, development and extension of current computer integrated control systems in pig raising. Technology and mathematic modeling of technological processes in pig raising, automatized control systems of technological processes in pig raising.

Disciplines course chosen by the university	**Semester**	**Credits**
Object oriented programming	3	4,5
Information technologies	3	4,0
Typical technological objects and processes in pig raising	2	5,0
Modeling of biotechnical objects in pig raising	2	5,0
Total		**18,5**
Disciplines course chosen by the students		
Methods and means of current automatized control of technological processes	3	3,5
Technical automatics devices and equipment of automatized control systems	3	4,0
According to the topic of master's paper (one discipline is chosen)		
Systems and database management technologies	3	6,0
Computer integrated control systems	3	6,0
Optimum systems of automatized control	3	6,0
Total		**13,5**

Proposed topics for master's papers:

1. Optimal SAR of air temperature in pigsty.
2. Computer integrated SAR of fodder distribution in pigsty.
3. Elaboration of database of fodder registration.

Master programme

COMPUTER AND INTEGRATED CONTROL SYSTEMS IN ELEVATOR INDUSTRY

Research, development and extension of current computer integrated control systems in elevator industry. Technology and mathematic modeling of technological processes in elevator industry, automatized control systems of technological processes in elevator industry.

Disciplines course chosen by the university	**Semester**	**Credits**
Object oriented programming	3	4,5
Information technologies	3	4,0
Typical technological objects and processes in elevator industry	2	5,0
Modeling of biotechnical objects in elevator industry	2	5,0
Total		**18,5**
Disciplines course chosen by the students		
Methods and means of current automatized control of technological processes	3	3,5
Technical automatics devices and equipment of automatized control systems	3	4,0
According to the topic of master's paper (one discipline is chosen)		
Systems and database management technologies	3	6,0
Computer integrated control systems	3	6,0
Optimum systems of automatized control	3	6,0
Total		**13,5**

Proposed topics for master's papers:

1. Optimal SAR of air temperature in mine dryer.
2. SAR improvement of heat generator of grain dryers
3. Elaboration of database of grain registration.

Master programme

COMPUTER AND INTEGRATED CONTROL SYSTEMS IN GREENHOUSE INDUSTRY

Research, development and extension of current computer integrated control systems in greenhouse industry. Technology and mathematic modeling of technological processes in greenhouse industry, automatized control systems of technological processes in greenhouse industry.

Disciplines course chosen by the university	**Semester**	**Credits**
Object oriented programming	3	4,5
Information technologies	3	4,0
Typical technological objects and processes in greenhouse industry	2	5,0
Modeling of biotechnical objects in greenhouse industry	2	5,0
Total		**18,5**
Disciplines course chosen by the students		
Methods and means of current automatized control of technological processes	3	3,5
Technical automatics devices and equipment of automatized control systems	3	4,0
According to the topic of master's paper (one discipline is chosen)		
Systems and database management technologies	3	6,0
Computer integrated control systems	3	6,0
Optimum systems of automatized control	3	6,0
Total		**13,5**

Proposed topics for master's papers:

1. Optimal SAR of air temperature in a greenhouse.
2. Computer integrated SAR of temperature regime in greenhouse.
3. SAR improvement of air temperature in field mushroom nursery.

Master programme

COMPUTER AND INTEGRATED CONTROL SYSTEMS IN AGRICULTURAL PRODUCTION STORAGE AND PROCESSING

Research, development and extension of current computer integrated control systems in agricultural production storage and processing. Technology and mathematic modeling of technological processes in agricultural production storage and processing, automatized control systems of technological processes in agricultural production storage and processing.

Disciplines course chosen by the university	**Semester**	**Credits**
Object oriented programming	3	4,5
Information technologies	3	4,0
Typical technological objects and processes in agricultural production storage and processing	2	5,0
Modeling of biotechnical objects in agricultural production storage and processing	2	5,0
Total		**18,5**
Disciplines course chosen by the students		
Methods and means of current automatized control of technological processes	3	3,5
Technical automatics devices and equipment of automatized control systems	3	4,0
According to the topic of master's paper (one discipline is chosen)		
Systems and database management technologies	3	6,0
Computer integrated control systems	3	6,0
Optimum systems of automatized control	3	6,0
Total		**13,5**

Proposed topics for master's papers:

1. Optimal SAR of moisture air in vegetable store.
2. Computer integrated SAR of sausages filling.
3. SAR improvement of air temperature in vegetable store.

RESEARCH- ORIENTED SPECIALIZATION

Master programme

ENERGY EFFICIENT CONTROL SYSTEMS OF BIOTECHNICAL OBJECTS

Research, development and extension of current energy efficient control systems of biotechnical objects. Technology and mathematic modeling of technological processes in AIC branches, automatized control systems of technological processes in AIC branches.

Disciplines course chosen by the university	**Semester**	**Credits**
Object oriented programming	3	4,5
Information technologies	3	4,0
Typical technological objects and processes in AIC branches	2	5,0
Modeling of biotechnical objects	2	5,0
Total		**18,5**
Disciplines course chosen by the students		
Identification of automation objects	3	3,5
Research of operations	3	4,0
According to the topic of master's paper (one discipline is chosen)		
Intellectual systems	3	6,0
Neuro information systems	3	6,0
Adaptive systems	3	6,0
Total		**13,5**

Proposed topics for master's papers:

1. Adaptive automatized system of TP control.
2. Intelectual automatized system of TP control.
3. Automatized system of TP control based on neuro information nets.

SPECIALITY
8.090603 „ELECTRO TECHNICAL SYSTEMS OF POWER SUPPLY”

Master programme of industry-oriented specialization

Electricity networks and systems	TSC of power supply systems (educational building 8, room 17, tel. (044) 527-85-80 Coordinator – O. V. Gai, candidate of technical science, assistant

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines course according to the requirements of MES		
Intellectual property	1	1,0
Labour protection in the branch (electrical safety)	2	4,0
Energetics planning and forecast	2	1,0
Energy saving regimes of power supply	2	5,0
Typical electric gear	2	3,0
Telemechanics and ACS of power supply systems	2	5,0
Industry enterprises power supply	1	5,0
Information and calculation complexes in power engineering	2	2,0
Principles of patent science and author right	1	2,0
Energy control and experimental research methods of electric regimes	1	2,0
Progressive methods of energy saving and power supply systems development	2	2,0
Total		**32,0**
Disciplines course chosen by the university	2,3	**19,0**
Disciplines course chosen by the students	3	**16,0**
State attestation		
Practice	1,2	10,0
Preparation and defence of master's paper	3	6,0
Total		**16,0**
Total		**90,0**

INDUSTRY- ORIENTED SPECIALIZATION

Master programme

ELECTRICITY NETWORKS AND SYSTEMS

Research, development and extension of energy saving technologies, electricity networks and systems. Power plants, modeling and projecting of AIC power supply systems. Modeling and protection devices of automatics and telemechanics of power supply systems.

Disciplines course chosen by the university	**Semester**	**Credits**
Energy management and audit	3	4,0
Mathematic models in optimized power supply tasks	2	5,0
Relay protection and automatics of distributive electricity networks	3	5,0
Automatized control systems and energy use control	3	5,0
Total		**19,0**
Disciplines course chosen by students		
Energy saving in technological processes and equipment	3	6,0
Projecting of energy supply systems	3	5,0
Service technology and maintenance of energy supply systems electric plants	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Optimization of parameters and regimes of electricity networks operation.
2. Influence of autonomous power supply sources on quality and reliability of AIC enterprises power supply.
3. Improvement of AIC energy supply dew to introduction of new contact materials under current economic conditions.

SPECIALITY
8.091901 „POWER ENGINEERING OF AGRICULTURAL PRODUCTION”

Master programme of industry-oriented specialization

Computer and integrated control systems in poultry industry	TSC of automatics and information control systems (educational building 11, room 327, tel. (044) 527-87-44 Coordinator - V. M. Reshetiuk, candidate of technical sciences, associate professor
Computer and integrated control systems at milk production and pre-processing enterprises	TSC of automatics and information control systems (educational building 11, room 327, tel. (044) 527-87-44 Coordinator - V. M. Reshetiuk, candidate of technical sciences, associate professor
Computer and integrated control systems in pig raising	TSC of automatics and information control systems (educational building 11, room 327, tel. (044) 527-87-44 Coordinator - V. M. Reshetiuk, candidate of technical sciences, associate professor
Computer and integrated control systems in elevator industry	TSC of automatics and information control systems (educational building 11, room 327, tel. (044) 527-87-44 Coordinator - V. M. Reshetiuk, candidate of technical sciences, associate professor
Computer and integrated control systems in greenhouse industry	TSC of automatics and information control systems (educational building 11, room 327, tel. (044) 527-87-44 Coordinator - V. M. Reshetiuk, candidate of technical sciences, associate professor
Computer and integrated control systems in agricultural production storage and processing	TSC of automatics and information control systems (educational building 11, room 327, tel. (044) 527-87-44 Coordinator - V. M. Reshetiuk, candidate of technical sciences, associate professor

Electricity networks and systems	TSC of power supply systems (educational building 8, room 17, tel. (044) 527-85-80 Coordinator – O. V. Gai, candidate of technical science, assistant
AIC power supply	TSC of power supply systems (educational building 8, room 17, tel. (044) 527-85-80 Coordinator – O. V. Gai, candidate of technical science, assistant
Energy engineering in AIC	ITSC of automation and electrification of enterprises (educational building 8, room 27, tel. (044) 527-85-22 Coordinator – L. S. Chervins'kyi, doctor of technical sciences, professor

Master programme of research-oriented specialization

Energy efficient control systems of biotechnical objects	TSC of automatics and information control systems (educational building 11, room 327, tel. (044) 527-87-44 Coordinator - V. M. Reshetiuk, candidate of technical sciences, associate professor
Electricity networks and systems	TSC of power supply systems (educational building 8, room 17, tel. (044) 527-85-80 Coordinator – O. V. Gai, candidate of technical science, assistant
AIC power supply	TSC of power supply systems (educational building 8, room 17, tel. (044) 527-85-80 Coordinator – O. V. Gai, candidate of technical science, assistant
Scientific and technical principles of electrical and mechanic energy transformation	ITSC of automation and electrification of enterprises (educational building 8, room 27, tel. (044) 527-85-22 Coordinator – L. S. Chervins'kyi, doctor of technical sciences, professor

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Total		**5,5**
Compulsory disciplines course according to the requirements of MES		
Business foreign language	1	1,5
AIC power supply	2	3,0
Projecting of electrification, automation and energy supply systems	1	3,0
AIC heat and water supply	1	3,0
Electric technologies in AIC	2	3,0
Technologies of service and maintenance of energy equipment and automation devices	1	3,0
Labour protection in the branch (electrical safety)	2	3,0
Mathematic support of master programmes	2	3,0
Information technologies	2	2,0
Personnel management	2	2,0
Electric gears of production machines and mechanisms	1	3,0
Energy saving and use of renewable energy sources	2	2,0
Scientific research technologies	2	2,0
Total		**33,5**
Disciplines course chosen by the university	2,3	**19,0**
Disciplines course chosen by the students	1,2,3	**16,0**
State attestation		
Practice	1,2	10,0
Preparation and defence of master's paper	3	6,0
Total		**16,0**
Total		**90,0**

INDUSTRY- ORIENTED SPECIALIZATION

Master programme

COMPUTER AND INTEGRATED CONTROL SYSTEMS IN POULTRY INDUSTRY

Research, development and extension of current computer integrated control systems in poultry industry. Technology and mathematic modeling of technological processes in poultry industry, automatized control systems of technological processes in poultry industry.

Disciplines course chosen by the university	**Semester**	**Credits**
Information technologies in control systems	2	3,0
Automatized control systems in the branch	2	3,0
Engineering in automation systems service	3	3,0
Economic calculations in engineering	3	2,0
Typical technological objects and processes in poultry industry	3	4,0
Modeling of biotechnical objects in poultry industry	3	4,0
Total		**19,0**
Disciplines course chosen by the students		
Methods and means of current automatized control of technological processes	3	6,0
Technical automatics devices and equipment of automatized control systems	3	5,0
Microprocessor control systems	3	5,0
Optimum systems of automatized control	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Optimal SAR of air temperature in incubator.
2. Computer integrated SAR of temperature regime in industrial aviary.
3. Elaboration of database of poultry products registration

Master programme

COMPUTER AND INTEGRATED CONTROL SYSTEMS AT MILK PRODUCTION AND PRE-PROCESSING ENTERPRISES

Research, development and extension of current computer integrated control systems at milk production and pre-processing enterprises. Technology and mathematic modeling of technological processes at milk production and pre-processing enterprises, automatized control systems of technological processes at milk production and pre-processing enterprises.

Disciplines course chosen by the university	**Semester**	**Credits**
Information technologies in control systems	2	3,0
Automatized control systems in the branch	2	3,0
Engineering in automation systems service	3	3,0
Economic calculations in engineering	3	2,0
Typical technological objects and processes in dairy industry	3	4,0
Modeling of biotechnical objects in dairy industry	3	4,0
Total		**19,0**
Disciplines course chosen by the students		
Methods and means of current automatized control of technological processes	3	6,0
Technical automatics devices and equipment of automatized control systems	3	5,0
Microprocessor control systems	3	5,0
Optimum systems of automatized control	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Optimal SAR of air temperature in cowshed
2. Computer integrated SAR of dairy products packing.
3. SAR improvement of milk pasteurization process using computer integrated technologies.

Master programme

COMPUTER AND INTEGRATED CONTROL SYSTEMS IN PIG RAISING

Research, development and extension of current computer integrated control systems in pig raising. Technology and mathematic modeling of technological processes in pig raising, automatized control systems of technological processes in pig raising.

Disciplines course chosen by the university	**Semester**	**Credits**
Information technologies in control systems	2	3,0
Automatized control systems in the branch	2	3,0
Engineering in automation systems service	3	3,0
Economic calculations in engineering	3	2,0
Typical technological objects and processes in pig raising	3	4,0
Modeling of biotechnical objects in pig raising	3	4,0
Total		**19,0**
Disciplines course chosen by the students		
Methods and means of current automatized control of technological processes	3	6,0
Technical automatics devices and equipment of automatized control systems	3	5,0
Microprocessor control systems	3	5,0
Optimum systems of automatized control	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Optimal SAR of air temperature in pigsty.
2. Computer integrated SAR of fodder distribution in pigsty.
3. Elaboration of database of fodder registration.

Master programme

COMPUTER AND INTEGRATED CONTROL SYSTEMS IN ELEVATOR INDUSTRY

Research, development and extension of current computer integrated control systems in elevator industry. Technology and mathematic modeling of technological processes in elevator industry, automatized control systems of technological processes in elevator industry.

Disciplines course chosen by the university	**Semester**	**Credits**
Information technologies in control systems	2	3,0
Automatized control systems in the branch	2	3,0
Engineering in automation systems service	3	3,0
Economic calculations in engineering	3	2,0
Typical technological objects and processes in grain industry	3	4,0
Modeling of biotechnical objects in grain industry	3	4,0
Total		**19,0**
Disciplines course chosen by students		
Methods and means of current automatized control of technological processes	3	6,0
Technical automatics devices and equipment of automatized control systems	3	5,0
Microprocessor control systems	3	5,0
Optimum systems of automatized control	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Optimal SAR of air temperature in mine dryer.
2. SAR improvement of heat generator of grain dryers
3. Elaboration of database of grain registration.

Master programme

COMPUTER AND INTEGRATED CONTROL SYSTEMS IN GREENHOUSE INDUSTRY

Research, development and extension of current computer integrated control systems in greenhouse industry. Technology and mathematic modeling of technological processes in greenhouse industry, automatized control systems of technological processes in greenhouse industry.

Disciplines course chosen by the university	**Semester**	**Credits**
Information technologies in control systems	2	3,0
Automatized control systems in the branch	2	3,0
Engineering in automation systems service	3	3,0
Economic calculations in engineering	3	2,0
Typical technological objects and processes in greenhouses	3	4,0
Modeling of biotechnical objects in greenhouses	3	4,0
Total		**19,0**
Disciplines course chosen by the students		
Methods and means of current automatized control of technological processes	3	6,0
Technical automatics devices and equipment of automatized control systems	3	5,0
Microprocessor control systems	3	5,0
Optimum systems of automatized control	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Optimal SAR of air temperature in a greenhouse.
2. Computer integrated SAR of temperature regime in greenhouse.
3. SAR improvement of air temperature in field mushroom nursery.

Master programme

COMPUTER AND INTEGRATED CONTROL SYSTEMS IN AGRICULTURAL PRODUCTION STORAGE AND PROCESSING

Research, development and extension of current computer integrated control systems in agricultural production storage and processing. Technology and mathematic modeling of technological processes in agricultural production storage and processing automatized control systems of technological processes in agricultural production storage and processing.

Disciplines course chosen by the university	**Semester**	**Credits**
Information technologies in control systems	2	3,0
Automatized control systems in the branch	2	3,0
Engineering in automation systems service	3	3,0
Economic calculations in engineering	3	2,0
Typical technological objects and processes in agricultural products processing	3	4,0
Modeling of biotechnical objects in agricultural products processing	3	4,0
Total		**19,0**
Disciplines course chosen by the students		
Methods and means of current automatized control of technological processes	3	6,0
Technical automatics devices and equipment of automatized control systems	3	5,0
Microprocessor control systems	3	5,0
Optimum systems of automatized control	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Optimal SAR of moisture air in vegetable store.
2. Computer integrated SAR of sausages filling.
3. SAR improvement of air temperature in vegetable store.

Master programme

ELECTRICITY NETWORKS AND SYSTEMS

Research, development and extension of energy saving technologies, electricity networks and systems. Power plants, modeling and projecting of AIC power supply systems. Modeling and protection devices of automatics and telemechanics of power supply systems.

Disciplines course chosen by the university	**Semester**	**Credits**
Electricity networks and systems	2	5,0
Projecting of energy supply systems in AIC	3	5,0
Automatized control systems and energy use control	3	4,0
Transitory processes in power supply systems	3	5,0
Total		**19,0**
Disciplines course chosen by the students		
Relay protection and automatics of distributive electricity networks	3	6,0
Automatics and telemechanics protection devices of power supply systems	3	5,0
Electric plants and power supply systems	3	5,0
Small electric stations in AIC	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Optimization of parameters and regimes of electricity networks operation.
2. Influence of autonomous power supply sources on quality and reliability of AIC enterprises power supply.
3. Improvement of AIC energy supply dew to introduction of new contact materials under current economic conditions.

AIC POWER SUPPLY

Assembling and operation of electricity generating plants in agriculture, development and extension of non-traditional and restored power sources in AIC. Power resources, energy sources and heat technologies.

Disciplines course chosen by the university	**Semester**	**Credits**
Heat and electricity generating plants and systems	2	5,0
Energy sources calculations and regulation distribution and consumption	3	5,0
Non-traditional and restored power sources in AIC	3	4,0
Energy efficiency of agricultural production energy equipment	3	5,0
Total		**19,0**
Disciplines course chosen by the students		
Energy saving in heat technologies	3	6,0
Biofuel	3	5,0
Gas supply	3	5,0
Small HES and wind energetic plants in AIC	3	5,0
Heat technologies in agricultural products production and processing	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Automatized system of energy sources calculations and regulation distribution and consumption.
2. Energy supply of cattle farm at the account of restored power sources.
3. Influence of autonomous feeding sources on quality and reliability of AIC enterprises power supply.

Master programme

ENERGY ENGINEERING IN AIC

Organization of projecting, assembling, operation and technical service of operating electric equipment. Reliability of technical systems and energy sources and resources quality. Energy engineering technologies and electric equipment operation reliability.

Disciplines course chosen by the university	**Semester**	**Credits**
Technical service of electric equipment	2	5,0
Energy audit and management in AIC	3	5,0
Engineering psychology	3	4,0
Technical systems reliability, risks caused by technological activities of people	3	5,0
Total		**19,0**
Disciplines course chosen by the students		
Energy engineering technologies	3	6,0
Electric equipment operation reliability in AIC	3	5,0
Energy sources calculations and regulation distribution and consumption	3	5,0
Energy resources and sources quality	3	5,0
Economy of power supply	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Project of agricultural enterprise power service.
2. Electrification of technological processes at electric equipment technical service station.
3. Systems of agricultural enterprise power management.

RESEARCH- ORIENTED SPECIALIZATION

Master programme

ENERGY EFFICIENT CONTROL SYSTEMS OF BIOTECHNICAL OBJECTS

Research, development and extension of current energy efficient control systems of biotechnical objects. Technology and mathematic modeling of technological processes in AIC branches, automatized control systems of technological processes in AIC branches.

Disciplines course chosen by the university	**Semester**	**Credits**
Information technologies	2	3,0
Typical technological objects and processes in AIC branches	2	4,0
Biotechnical objects modeling	3	4,0
Computer and modeling control systems in AIC	3	3,0
Neuronic networks	3	3,0
Calculations of scientific elaborations energy efficiency	3	2,0
Total		**19,0**
Disciplines course chosen by the students		
Research of operations	3	6,0
Intellectual systems	3	5,0
Neuro information systems	3	5,0
Adaptive systems	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Adaptive automatized system of TP control.
2. Intelectual automatized system of TP control.
3. Automatized system of TP control based on neuro information nets.

Master programme

ELECTRICITY NETWORKS AND SYSTEMS

Projecting, assembling, installation and operation of electricity transmission lines, transformer substations and distribution devices. Registration and rational use of power. Power plants, modeling and projecting of AIC power supply systems. Modeling and protection devices of power supply systems of telemechanics and automatics.

Disciplines course chosen by the university	**Semester**	**Credits**
Transitory processes in power supply systems	2	5,0
Power systems economic efficiency in AIC	3	5,0
Power supply systems reliability	3	4,0
Criteria tasks of AIC power supply	3	5,0
Total		**19,0**
Disciplines course chosen by the university		
Power supply systems modeling and optimization	3	6,0
Information control systems in electricity networks	3	5,0
Non-traditional and restored power sources in AIC	3	5,0
Relay protection and automatics of distributive electricity networks	3	5,0
Functional alloys in electrotechnics devices	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Optimization of parameters and regimes of electricity networks operation.
2. Complex use of non-traditional and traditional power sources.
3. Modernization of automation system and 10 KV lines protection.

Master programme

AIC POWER SUPPLY

Research and development of up-to-date energetic plants in agriculture. Research, development and extension of non-traditional and restored power sources for agriculture. Nanotechnologies of heat-mass exchange intensification, non-traditional and restored power sources in AIC. Complex integrated power supply systems.

Disciplines course chosen by the university	**Semester**	**Credits**
Registration and regulation of energy sources and resources consumption	2	5,0
Power systems efficiency in AIC	3	5,0
Optimization of power supply and power saving systems	3	4,0
Nanotechnologies of heat-mass exchange intensification	3	5,0
Total		**19,0**
Disciplines course chosen by students		
Modeling of heat and hydrodynamic processes	3	6,0
Complex use of non-traditional and traditional power sources.	3	5,0
Heat-mass exchange in technological processes of agricultural products processing	3	5,0
Cogeneration plants	3	5,0
Total		**18,0**

Proposed topics for master's papers:

1. Complex use of non-traditional and traditional power sources.
2. Small cogeneration plant for a farm.
3. Development of technologies and equipment for bio substrate homogenization of biogas plants.

Master programme

SCIENTIFIC AND TECHNICAL PRINCIPLES OF ELECTRICAL AND MECHANIC ENERGY TRANSFORMATION

Research of electrical energy transformation methods, development of up-to-date of electric gears with improved operation properties. Main principles of research and current theory of energy electro mechanical transformation. Research technologies of electromagnetic devices and electro mechanical energy transformers.

Disciplines course chosen by the university	**Semester**	**Credits**
Current scientific problems in power engineering	2	5,0
Energy audit and management in AIC	3	5,0
Patent science and theory of engineering experiment	3	4,0
Current theory of energy electro mechanical transformation	3	5,0
Total		**19,0**
Disciplines course chosen by students		
Asynchronous machines of high energy efficiency and electromagnetic and electro mechanical processes in compensated asynchronous engines	3	6,0
Mathematical modeling of electromagnetic devices and electro mechanical energy transformers	3	5,0
Calculation of electromagnetic devices and electro mechanical energy transformers	3	5,0
Reliability of electromagnetic devices and electro mechanical energy transformers	3	5,0
Research methods of electromagnetic devices and electro mechanical energy transformers	3	5,0
Testing of electromagnetic devices and electro mechanical energy transformers	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Peculiarities of physical processes and calculation methods of compensated asynchronous engines descriptions.
2. Substantiation of parameters of reactive capacity compensation at formula-feed plant.
3. Development of energy saving technologies of the creation of compounded contact materials.

SPECIALITY 8.091903 „ELECTRIFICATION AND AUTOMATION OF AGRICULTURE”

Master programme of industry-oriented specialization

Computer and integrated control systems in poultry industry	TSC of automatics and information control systems (educational building 11, room 327, tel. (044) 527-87-44 Coordinator - V. M. Reshetiuk, candidate of technical sciences, associate professor
Computer and integrated control systems at milk production and pre-processing enterprises	TSC of automatics and information control systems (educational building 11, room 327, tel. (044) 527-87-44 Coordinator - V. M. Reshetiuk, candidate of technical sciences, associate professor
Computer and integrated control systems in pig raising	TSC of automatics and information control systems (educational building 11, room 327, tel. (044) 527-87-44 Coordinator - V. M. Reshetiuk, candidate of technical sciences, associate professor
Computer and integrated control systems in elevator industry	TSC of automatics and information control systems (educational building 11, room 327, tel. (044) 527-87-44 Coordinator - V. M. Reshetiuk, candidate of technical sciences, associate professor
Computer and integrated control systems in greenhouse industry	TSC of automatics and information control systems (educational building 11, room 327, tel. (044) 527-87-44 Coordinator - V. M. Reshetiuk, candidate of technical sciences, associate professor

Computer and integrated control systems in agricultural production storage and processing	TSC of automatics and information control systems (educational building 11, room 327, tel. (044) 527-87-44 Coordinator - V. M. Reshetiuk, candidate of technical sciences, associate professor
Electrified technologies and electric equipment in livestock raising	ITSC of automation and electrification of enterprises (educational building 8, room 27, tel. (044) 527-85-22 Coordinator – L. S. Chervins'kyi, doctor of technical sciences, professor
Electrified technologies and electric equipment in seed growing and plant growing	ITSC of automation and electrification of enterprises (educational building 8, room 27, tel. (044) 527-85-22 Coordinator – L. S. Chervins'kyi, doctor of technical sciences, professor
Electrified technologies and electric equipment in food and processing industry	ITSC of automation and electrification of enterprises (educational building 8, room 27, tel. (044) 527-85-22 Coordinator – L. S. Chervins'kyi, doctor of technical sciences, professor
Technical service and electrical equipment of mobile agricultural machinery	ITSC of automation and electrification of enterprises (educational building 8, room 27, tel. (044) 527-85-22 Coordinator – L. S. Chervins'kyi, doctor of technical sciences, professor

Master programme of research-oriented specialization

Up-to-date technologies of technical diagnostics of electrical equipment	ITSC of automation and electrification of enterprises (educational building 8, room 27, tel. (044) 527-85-22 Coordinator – L. S. Chervins'kyi, doctor of technical sciences, professor
Electrified technologies and electric equipment in agricultural production	ITSC of automation and electrification of enterprises (educational building 8, room 27, tel. (044) 527-85-22 Coordinator – L. S. Chervins'kyi, doctor of technical sciences, professor
Energy efficient control systems of biotechnical objects	TSC of automatics and information control systems (educational building 11, room 327, tel. (044) 527-87-44 Coordinator - V. M. Reshetiuk, candidate of technical sciences, associate professor

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Total		**5,5**
Compulsory disciplines course according to the requirements of MES		
Business foreign language	1	1,5
AIC power supply	2	3,0
Projecting of electrification, automation and energy supply systems	1	3,0
Alternative energy sources in AIC	2	3,0
Electric technologies in AIC	2	3,0
Technologies of service and maintenance of energy equipment and automation devices	1	3,0
Labour protection in the branch (electrical safety)	2	3.0
Mathematic support of master programmes	2	3,0
Information technologies	2	2,0
Computer integrated technologies in agriculture electrification and automation	2	2,0
Electric gears of production machines and mechanisms	1	3,0
Device provision of scientific researches	2	2,0
Scientific research technologies	2	2,0
Total		**33,5**
Disciplines course chosen by the university	1,2,3	**19,0**
Disciplines course chosen by students	2,3	**16,0**
State attestation		
Practice	1,2	10,0
Preparation and defence of master's paper	3	6,0
Total		**16,0**
Total		**90,0**

INDUSTRY- ORIENTED SPECIALIZATION

Master programme

COMPUTER AND INTEGRATED CONTROL SYSTEMS IN POULTRY INDUSTRY

Research, development and extension of current computer integrated control systems in poultry industry. Technology and mathematic modeling of technological processes in poultry industry, automatized control systems of technological processes in poultry industry.

Disciplines course chosen by the university	**Semester**	**Credits**
Information technologies in control systems	2	3,0
Automatized control systems in the branch	2	3,0
Engineering in automation systems service	3	3,0
Economic calculations in engineering	3	2,0
Typical technological objects and processes in poultry industry	3	4,0
Modeling of biotechnical objects in poultry industry	3	4,0
Total		**19,0**
Disciplines course chosen by the students		
Methods and means of current automatized control of technological processes	3	6,0
Technical automatics devices and equipment of automatized control systems	3	5,0
Microprocessor control systems	3	5,0
Optimum systems of automatized control	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Optimal SAR of air temperature in incubator.
2. Computer integrated SAR of temperature regime in industrial aviary.
3. Elaboration of database of poultry products registration

Master programme

COMPUTER AND INTEGRATED CONTROL SYSTEMS AT MILK PRODUCTION AND PRE-PROCESSING ENTERPRISES

Research, development and extension of current computer integrated control systems at milk production and pre-processing enterprises. Technology and mathematic modeling of technological processes at milk production and pre-processing enterprises, automatized control systems of technological processes at milk production and pre-processing enterprises.

Disciplines course chosen by the university	**Semester**	**Credits**
Information technologies in control systems	2	3,0
Automatized control systems in the branch	2	3,0
Engineering in automation systems service	3	3,0
Economic calculations in engineering	3	2,0
Typical technological objects and processes in dairy industry	3	4,0
Modeling of biotechnical objects in dairy industry	3	4,0
Total		**19,0**
Disciplines course chosen by the students		
Methods and means of current automatized control of technological processes	3	6,0
Technical automatics devices and equipment of automatized control systems	3	5,0
Microprocessor control systems	3	5,0
Optimum systems of automatized control	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Optimal SAR of air temperature in cowshed
2. Computer integrated SAR of dairy products packing.
3. SAR improvement of milk pasteurization process using computer integrated technologies.

Master programme

COMPUTER AND INTEGRATED CONTROL SYSTEMS IN PIG RAISING

Research, development and extension of current computer integrated control systems in pig raising. Technology and mathematic modeling of technological processes in pig raising, automatized control systems of technological processes in pig raising.

Disciplines course chosen by the university	**Semester**	**Credits**
Information technologies in control systems	2	3,0
Automatized control systems in the branch	2	3,0
Engineering in automation systems service	3	3,0
Economic calculations in engineering	3	2,0
Typical technological objects and processes in pig raising	3	4,0
Modeling of biotechnical objects in pig raising	3	4,0
Total		**19,0**
Disciplines course chosen by the students		
Methods and means of current automatized control of technological processes	3	6,0
Technical automatics devices and equipment of automatized control systems	3	5,0
Microprocessor control systems	3	5,0
Optimum systems of automatized control	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Optimal SAR of air temperature in pigsty.
2. Computer integrated SAR of fodder distribution in pigsty.
3. Elaboration of database of fodder registration.

Master programme

COMPUTER AND INTEGRATED CONTROL SYSTEMS IN ELEVATOR INDUSTRY

Research, development and extension of current computer integrated control systems in elevator industry. Technology and mathematic modeling of technological processes in elevator industry, automatized control systems of technological processes in elevator industry.

Disciplines course chosen by the university	**Semester**	**Credits**
Information technologies in control systems	2	3,0
Automatized control systems in the branch	2	3,0
Engineering in automation systems service	3	3,0
Economic calculations in engineering	3	2,0
Typical technological objects and processes in grain industry	3	4,0
Modeling of biotechnical objects in grain industry	3	4,0
Total		**19,0**
Disciplines course chosen by students		
Methods and means of current automatized control of technological processes	3	6,0
Technical automatics devices and equipment of automatized control systems	3	5,0
Microprocessor control systems	3	5,0
Optimum systems of automatized control	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Optimal SAR of air temperature in mine dryer.
2. SAR improvement of heat generator of grain dryers
3. Elaboration of database of grain registration.

Master programme

COMPUTER AND INTEGRATED CONTROL SYSTEMS IN GREENHOUSE INDUSTRY

Research, development and extension of current computer integrated control systems in greenhouse industry. Technology and mathematic modeling of technological processes in greenhouse industry, automatized control systems of technological processes in greenhouse industry.

Disciplines course chosen by the university	**Semester**	**Credits**
Information technologies in control systems	2	3,0
Automatized control systems in the branch	2	3,0
Engineering in automation systems service	3	3,0
Economic calculations in engineering	3	2,0
Typical technological objects and processes in greenhouses	3	4,0
Modeling of biotechnical objects in greenhouses	3	4,0
Total		**19,0**
Disciplines course chosen by the students		
Methods and means of current automatized control of technological processes	3	6,0
Technical automatics devices and equipment of automatized control systems	3	5,0
Microprocessor control systems	3	5,0
Optimum systems of automatized control	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Optimal SAR of air temperature in a greenhouse.
2. Computer integrated SAR of temperature regime in greenhouse.
3. SAR improvement of air temperature in field mushroom nursery.

Master programme

COMPUTER AND INTEGRATED CONTROL SYSTEMS IN AGRICULTURAL PRODUCTION STORAGE AND PROCESSING

Research, development and extension of current computer integrated control systems in agricultural production storage and processing. Technology and mathematic modeling of technological processes in agricultural production storage and processing automatized control systems of technological processes in agricultural production storage and processing.

Disciplines course chosen by the university	**Semester**	**Credits**
Information technologies in control systems	2	3,0
Automatized control systems in the branch	2	3,0
Engineering in automation systems service	3	3,0
Economic calculations in engineering	3	2,0
Typical technological objects and processes in agricultiral products processing	3	4,0
Modeling of biotechnical objects in agricultiral products processing	3	4,0
Total		**19,0**
Disciplines course chosen by the students		
Methods and means of current automatized control of technological processes	3	6,0
Technical automatics devices and equipment of automatized control systems	3	5,0
Microprocessor control systems	3	5,0
Optimum systems of automatized control	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Optimal SAR of moisture air in vegetable store.
2. Computer integrated SAR of sausages filling.
3. SAR improvement of air temperature in vegetable store.

Master programme

ELECTRIFIED TECHNOLOGIES AND ELECTRIC EQUIPMENT IN LIVESTOCK RAISING

Research, development and extension of current electrified technologies at agricultural production storage and processing enterprises. Modeling of regulated electric gear and operation mechanisms in livestock raising. Projecting of electricity generating plants and lighting systems and circuits in livestock raising.

Disciplines course chosen by the university	**Semester**	**Credits**
Operation mechanisms at automatized plants	2	5,0
Modeling of regulated electric gear, apparatus and production lines	3	5,0
Electrotechnologies of agricultural products processing	3	5,0
Engineering psychology	3	4,0
Total		**19,0**
Disciplines course chosen by the students		
Projecting of electricity generating plants and circuits	3	6,0
Reliability of technical systems and risks caused by technological activities of people	3	5,0
Projecting of lighting systems and circuits	3	5,0
Optic electrotechnologies	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Electrification of technological processes in pigsty.
2. Electrification of technological processes in calf house.

Master programme

ELECTRIFIED TECHNOLOGIES AND ELECTRIC EQUIPMENT IN SEED GROWING AND PLANT GROWING

Research, development and extension of current electrified technologies at agricultural production storage and processing enterprises. Modeling of regulated electric gear and operation mechanisms in seed and plant growing. Projecting of electricity generating plants and lighting systems and circuits in seed and plant growing.

Disciplines course chosen by the university	**Semester**	**Credits**
Operation mechanisms at automatized plants	2	5,0
Modeling of regulated electric gear, apparatus and production lines	3	5,0
Electrotechnologies of agricultural products processing	3	5,0
Engineering psychology	3	4,0
Total		**19,0**
Disciplines course chosen by the students		
Electronic and ionic technologies in AIC	3	6,0
Reliability of technical systems and risks caused by technological activities of people	3	5,0
Optic electrotechnologies	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Electrification of technological processes in winter greenhouses.
2. Pre-sowing wheat processing in electric field of high tension.

Master programme

ELECTRIFIED TECHNOLOGIES AND ELECTRIC EQUIPMENT IN FOOD AND PROCESSING INDUSTRY

Research, development and extension of current electrified technologies at agricultural production storage and processing enterprises. Modeling of regulated electric gear and operation mechanisms in food and processing industry. Projecting of electricity generating plants and lighting systems and circuits in food and processing industry.

Disciplines course chosen by the university	**Semester**	**Credits**
Operation mechanisms at automatized plants	2	5,0
Modeling of regulated electric gear, apparatus and production lines	3	5,0
Electrotechnologies of agricultural products processing	3	5,0
Engineering psychology	3	4,0
Total		**19,0**
Disciplines course chosen by the students		
Projecting of electricity generating plants and circuits	3	6,0
Reliability of technical systems and risks caused by technological activities of people	3	5,0
Projecting of lighting systems and circuits	3	5,0
Electronic and ionic technologies in AIC	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Electrification of technological processes in livestock products processing.
2. Electrification of technological processes in food industry.
3. Electrification of technological processes in plant products processing.

Master programme

TECHNICAL SERVICE AND ELECTRICAL EQUIPMENT OF MOBILE AGRICULTURAL MACHINERY

The programme trains specialists for diagnostics, maintenance and technical service of electric equipment of agricultural mobile machinery. Problems of reliability and technical diagnostics of electric equipment of agricultural mobile machinery and problems of their operation.

Disciplines course chosen by the university	**Semester**	**Credits**
Systems of technical diagnostics of electric equipment	1	5,0
Electronic devices of agricultural mobile machinery	3	5,0
Reliability of technical systems and risks caused by technological activities of people	3	5,0
Engineering psychology	3	4,0
Total		**19,0**
Disciplines course chosen by the students		
Systems of electric equipment of agricultural mobile machinery	3	6,0
Control of functionality and troubleshooting of electric equipment	3	5,0
Electrical feeding sources of agricultural mobile machinery	3	5,0
Reliability of agricultural mobile machinery	3	5,0
Installation, service and maintenance of electrical equipment of agricultural mobile machinery	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Development of resource saving technologies of electric equipment parts restoration.
2. Electrification of technological processes in a workshop of service and maintenance of electrical equipment of agricultural mobile machinery.
3. Development of complex of technical devices of diagnostics of electrical equipment of agricultural mobile machinery.

RESEARCH- ORIENTED SPECIALIZATION

Master programme

UP-TO-DATE TECHNOLOGIES OF TECHNICAL DIAGNOSTICS OF ELECTRICAL EQUIPMENT

The programme trains specialists for research and development of up-to-date technologies in diagnostics, maintenance and technical service of electric equipment of agricultural mobile machinery. The main principles of research and applied problems of electrical equipment. Methods and technical devices of electric equipment diagnostics.

Disciplines course chosen by the university	**Semester**	**Credits**
Principles of system analysis	2	7,0
Patent science and theory of engineering experiment	3	6,0
Control of functionality and troubleshooting of electric equipment	3	6,0
Total		**19,0**
Disciplines course chosen by the students		
Theory of reliability in electrical equipment technical diagnostics	3	6,0
Mathematical modeling of electrical equipment	3	5,0
Methods and ways of electrical equipment technical diagnostics	3	5,0
Device provision of electrical equipment technical diagnostics	3	5,0
Pyrometric and thermal imaging technique in electrical equipment diagnostics	3	5,0
Theory and practice of prognosis of electrical equipment technical condition	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Development and research of the devices of electrical equipment technical diagnostics.
2. Development and research of restoration technologies of electrical equipment parts.
3. Theoretical prerequisites and technologies of thermal imaging control of power electrical equipment.

Master programme

ELECTRIFIED TECHNOLOGIES AND ELECTRIC EQUIPMENT IN AGRICULTURAL PRODUCTION

Research of methods of agricultural production efficiency increase using up-to-date electrified technologies. Modeling of regulated electric gear and operation mechanisms in AIC branches. Research methods of products quality processing in AIC branches.

Disciplines course chosen by the university	**Semester**	**Credits**
Electrotechnological methods of agricultural products research and processing	2	7,0
Mathematical modeling of technological processes in agriculture	3	6,0
Methods and means of control of agricultural products electrical processing efficiency	3	6,0
Total		**19,0**
Disciplines course chosen by the students		
Electrified technologies in AIC	3	6,0
Agricultural products processing in the field of corona discharge	3	5,0
Agricultural products electromagnetic processing	3	5,0
Spectrographic research methods of agricultural products processing quality	3	5,0
Total		**16,0**

Proposed topics for master's papers:

1. Evaluation of agricultural products quality by the method of gas discharge visual electrography.
2. Magnetic processing of fuel water and nutritious solvents in greenhouses.
3. Research of radiation spectrum of plant radiator.
4. Research of ultraviolet radiation effect on animals.

Master programme

ENERGY EFFICIENT CONTROL SYSTEMS OF BIOTECHNICAL OBJECTS

Research, development and extension of current energy efficient control systems of biotechnical objects. Technology and mathematic modeling of technological processes in AIC branches, automatized control systems of technological processes in AIC branches.

Disciplines course chosen by the university	**Semester**	**Credits**
Information technologies	2	3,0
Typical technological objects and processes in AIC branches	2	4,0
Biotechnical objects modeling	3	4,0
Computer and modeling control systems in AIC	3	3,0
Neuronic networks	3	3,0
Calculations of scientific elaborations energy efficiency	3	2,0
Total		**19,0**
Disciplines course chosen by the students		
Research of operations	3	6,0
Intellectual systems	3	5,0
Neuro information systems	3	5,0
Adaptive systems	3	5,0
Total		**16,0**

Proposed topics for master's papers:

4. Adaptive automatized system of TP control.
5. Intelectual automatized system of TP control.
6. Automatized system of TP control based on neuro information nets.

MASTER PROGRAMMES OF EDUCATION AND SCIENTIFIC INSTITUTE OF FORESTRY AND PARK-GARDENING

Educational and scientific institute of forestry and park gardening is involved in educational, research, innovative, methodical, production, information and extension and educative activities to obtain higher education, qualification and specialities in the direction “Forestry and park gardening”, “Timber storage and wood processing”, and specialities of these directions aimed at solution of current problems of silviculture, afforestation, forest renewal, forest cadastre and forest certification, up-to-date technologies of wood processing and obtaining of highly technological products. The same refers to the specialists in park gardening and landscape architecture.

Faculties which provide Master training:

Forestry faculty

It organizes and coordinates training of specialists in forestry and wood processing branches who respond the market demands of professional competence, operative adaptation to the demands of national and world labour markets, who are able to combine educational, research, innovative activity and provide cultural and education work among students.

Faculty of park gardening and landscape architecture

It organizes training of specialists in park gardening, housing and public utility economy and private business according to the multistage education system in accordance with current legislation and regulative documents and provide cultural and education work among students

The Master training and education process at the educational and scientific institute of forestry and park gardening envisages production and research specialization in all specialities. This enables graduates to work at forestry, public utility, park gardening, wood processing enterprises or at scientific institutions which deal with scientific problems in silviculture, park gardening construction and landscape architecture, wood processing or continue their study at post graduate course. The Bachelors have the possibility to continue their study in specialities of the directions “Specific categories”, “Pedagogics of higher school”, “Quality, standardization and certification”, “Business administration” and in speciality “State service” of the direction “State administration”.

Centers of practical training are SD of NULES of Ukraine „Boyarka forest research station”; forestry enterprises of the State committee of forestry and Ministry of agricultural policy of Ukraine, PUE „Kyivzelenbud”, National botanical garden named after M. M. Gryshko of NAS of Ukraine, arboretum „Sophiivka ", Yalta TSC of NULES of Ukraine, PD „Ukrderzhlisproect", arboretum „Oleksandria", reserves, regional and national parks, WPE and furniture enterprises of Kyiv.

The faculty cooperates with leading foreign higher institutions of Europe and the USA: Global institute of forests stable management of Yael university (USA), faculty of forest resources of Pennsylvania university (USA), Southern forestry research station of Swedish university of agricultural sciences, Maculae Institute (Aberdeen, Scotland), forestry faculty of Freiburg university, Warsaw SRI of forestry, international organizations– FAO, Ghent university (Belgium), Humboldt university (Germany), Iowa university and Purdue University (USA).

Mutual Master programme „EUROFORESTER” is conducted between forestry faculty and Swedish university of agricultural sciences. The graduates of the programme obtain diplomas of both educational institutions.

The scientists of the institute elaborate mutual projects with:

- Yael university (USA) „Energy of Europe biomass”,
- Pennsylvania university (USA) „Climate changes influence on disastrous conflagrations and watersheds of the Crimea and Chornobyl’”;
- Global conflagration monitoring centre of UNO „Reduction of emergency situations outbreak risks due to disastrous forest conflagrations in contaminated zones of ChAES”.

Every year 15-20 students have practical training on farms of Austria, Denmark, Germany, Finland.

Specialities:

8.130401 – „Forestry”;
8.092002 – „Technology of wood processing”;
8.130402 – „Park and gardening”.

Qualification of Master graduates according to the state classificator of professions of Ukraine:

In speciality 8.130401 „ Forestry" 1221.1 – chief forester, 1221.1 – chief forest-pathologist, 1221.2 – chief engineer in forestry management, 1221.2 – manager of (forest-hunting, hunting, pond, fishing) enterprises, 1221.2 – forester, 1221.2 – chief of forest nursery, 1221.2 – head of fire, nature protection, forest stations, 1223.1 – chief engineer, 2213.1 – scientific officer (agronomy, zoo engineering, silviculture, natural reserves), 2213.2 – agro forest ameliorator, 2213.2 – engineer in forest cultures, 2213.2 – engineer in forest management, 2213.2 – engineer in forest raw material resources, 2213.2 – engineer in forest protection and preservation, 2213.2 – forestry engineer, 2213.2 – engineer forest-pathologist, 2213.2 –engineer in timber storage, 2149.2 – engineer-researcher;

In speciality 8.092002 „ Technology of wood processing" 1222.2 – technology manager of (forest centre, forestry industrial complex, shop, lower timber landing, timber storage bay), 1237.1 – chief technologist, 2149.2 – engineer technologist, 7422.1 – inspector of wood processing production, 2213.2 – engineer in timber storage, 2149.2 – engineer researcher, 2149.1 – scientific officer (engineering branch);

In speciality 8.130402 „Park and gardening" 2149.2 – engineer in park gardening, 2149.2 – engineer researcher, 2213.2 – expert in floriculture, 2213.2 – expert in landscape design, 3212 – expert in park gardening.

Master graduates can be employed at State forestry, forestry, forest-hunting, hunting enterprises and Ministry of agricultural policy of Ukraine (forester, chief forester, engineer in forestry management, forestry engineer, engineer in forest cultures, engineer in forest protection and preservation, engineer in forest raw material resources, chief of forest nursery, agro forest ameliorator, head of forest-hunting enterprise, head of fire station, technology manager of (forest centre, forestry industrial complex, shop, lower timber landing, timber storage bay), Ukrainian state projecting forest management production enterprise „Ukrderzhlisproect", state specialized forest protection enterprise „Ukrlisozakhyst", Ukrainian SRI of forestry and agro forest melioration named after G. M. Vysots'ryi, related higher educational institutions of I-II and III-IV levels of accreditation, zoological parks, reserves and national parks, Ministry of environment protection of Ukraine.

Masters in speciality „Wood processing technologies" can be employed at related higher educational institutions of I-II and III-IV levels of accreditation, state and commercial enterprises in construction materials production and sales, Ukrainian SRI „Resource", state and commercial wood processing and furniture enterprises.

Masters in park gardening can be employed at SE KPU „Kyivzelenbud", state housing and public utility enterprises, private companies of planting and landscape design, landscape projecting bureau.

SPECIALITY
8.130401 „FORESTRY”

Master programme of industry-oriented specialization

Forestry science and practical silviculture ***Hunting science*** ***Forest melioration*** ***Forest protection*** ***Forest renewal and cultivation***	TSC of silviculture and extended forest renewal (educational building №1, room № 91, tel. 527-82-82) Coordinator – S. V. Zibtsev, candidate of agricultural sciences, associate professor tel.: 527-82-82
Forest management ***Management of forest resources and forest entrepreneurship*** ***Forest certification***	TSC of forest management, standardization and forest certification (educational building №1, room № 98, tel. 527-88-00) Coordinator – P. V. Kravets', candidate of agricultural sciences, associate professor tel.: 527-88-00
Reserves science	TSC of landscape architecture and phytodesign (educational building № 1a, room № 15, tel. 527-82-62) Coordinator – N. O. Oleksiichenko, doctor of agricultural sciences, senior scientific researcher tel.: 527-82-62
Biotechnology in forestry	TSC of biotechnologies (educational building № 17 room № 216, tel. 527-87-90 Coordinator – O. L. Kliachenko, candidate of biological sciences, associate professor tel. 527-87-90

Master programme of research-oriented specialization

Theoretical principles of forest resources renewal based on fundamentals of ecologically oriented silviculture ***Forest and agricultural landscape science*** ***Theoretical principles of formation of highly productive forests based on sustainable silvicullture*** ***Theoretical principles of monitoring and reduction of forest fires risks***	TSC of silviculture and extended forest renewal (educational building №1, room № 91, tel. 527-82-82) Coordinator – S. V. Zibtsev, candidate of agricultural sciences, associate professor tel.: 527-82-82
Biological and energetic productivity of forest phytocenoses ***Theoretical and experimental principles of complex registration and forest bioresources use***	TSC of forest management, standardization and forest certification (educational building №1, room № 98, tel. 527-88-00) Coordinator – P. V. Kravets', candidate of agricultural sciences, associate professor tel.: 527-88-00

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines course according to the requirements of MES		
Psychology of management	3	1,5
Methods of scientific researches	3	1,5
Accounting in forestry	1	2,5
Management of forestry production	1	2,5
Planning of forestry production	1,2	6,0
Regulation of forests productivity	1	3,5
Labour protection in the branch	1	2,5
Forest policy	2	2,5
Total		**22,5**
Disciplines course chosen by the university	2,3	**35,5**
Disciplines course chosen by students	2,3	**6,0**
State attestation		
Practice	1,2	10,0
Preparation and defence of master's paper	3	9,0
Total		**19,0**
Total		**90,0**

INDUSTRY- ORIENTED SPECIALIZATION

Master programme

Forestry science and practical silviculture

Master programme envisages specialicts training in silviculture and related sciences which help students to understand complex forest nature and multi factors relation with environment.

Disciplines course chosen by the university	**Semester**	**Credits**
Timber storage	2,3	6,0
Forest roads and transport	2	4,0
Forest commodity science	2	4,0
Wood processing	2	3,5
Hunting science	2	3,5
Forest tapping	2	3,5
Forest ecology and typology	3	3,5
Forest productivity increase by silviculture methods	3	5,0
Industrial methods of forest growing	3	2,5
Total		**35,5**
Disciplines course chosen by students		
Non arboreal resources and side forest use	2	3,0
Biological principles of cleaning cutting	3	3,0
Total		**6,0**
Total		**41,5**

Proposed topics for master's papers:

1. Typological characteristics of forestry enterprise forest stock as the base of root forest plantations growing.
2. Complex of measures to increase forest plantations productivity and quality applying silviculture methods.

Master programme

HUNTING SCIENCE

Master students study methods of hunting, substantiation of economic efficiency of artificial game animals' breeding at basic forestry enterprise and prospects of its use for hunting.

Disciplines course chosen by the university	**Semester**	**Credits**
Pyrotechnics	2,3	6,0
Biology and otology of hunted animals	2	4,5
Hunting organization and hunted animals catching technology	2	4,0
Fur farming and fur commodity science	2	4,5
Game animals' breeding	2	4,0
Huntsman safety rules	3	3,0
Hunting products processing technology	3	4,5
Hunting legislation	3	3,0
Regulation of working conditions of hunting reserve	3	2,0
Total		**35,5**
Disciplines course chosen by students		
Hunting dog breeding	2	3,0
Hunting trophies	2	3,0
Total		**6,0**
Total		**41,5**

Proposed topics for master's papers:

1. Forest importance of cheiroptera and insectivorous birds and methods of population conservation and attraction in plantations.
2. The influence of the wild hoofed populations on forest plantation condition and the ways of their amount optimization.

Master programme of research-oriented specialization

FOREST MELIORATION

The programme trains specialists in creation and use of protective forest plantations as a component of zonal anti erosion systems and the basis of architectonics of forest and agricultural landscapes which is determined by the peculiarity of natural, climatic and soil conditions of Ukraine.

Disciplines course chosen by the university	**Semester**	**Credits**
Regulation of forest protective plantations	2	3,0
Erosion science	2	4,5
Forest land re-cultivation	2	4,5
Forest and agricultural landscapes	2	4,0
Systems of erosion soil protection	2,3	7,0
Protective afforestation	3	4,5
Forest and agricultural landscapes optimization	3	4,5
Zonal anti erosion systems	3	3,5
Total		**35,5**
Disciplines course chosen by students		
Protective plantations on roads	2	3,0
Pyrotechnic melioration	2	3,0
Total		**6,0**
Total		**41,5**

Proposed topics for master's papers:

1. Optimization of forest component in forest and agricultural landscape structure.
2. Formation of optimal constructions of field protective forest belts by silviculture methods.
3. Generalization of the experience of pine cultures creation on old arable (sandy) soils and their growth improvement ways.

Master programme

FOREST PROTECTION

The programme envisages the solution of important problems of development of bioecological principles of complex protection systems and forest biocenoses sanitation, study of diseases agents of seedlings and saplings in forest nurseries and elaboration of protection system measures.

Disciplines course chosen by the university	**Semester**	**Credits**
Forest pathology	2	5,0
Mathematical modeling of vermin and pathogenic agents amounts	3	4,0
Forest nemathology	2	4,5
Technology of integrated forest protection	2,3	8,0
Diagnostics of forest vermin and pathogenic agents	2	4,0
Forest arboreal plants immunity to pathogenic agents	2	5,0
Vermin and pathogenic agents forecast	3	5,0
Total		**35,5**
Disciplines course chosen by students		
Methods of phytopathological researches of forest biocenosis (*pine fungus, vascular mycosis, seed and seedlings diseases*)	2	3,0
Micotrophy of arboreal plants	3	3,0
Total		**6,0**
Total		**41,5**

Proposed topics for master's papers:

1. Complex influence of pine fungus and trunk vermin on pine plantations and protection system measures.
2. Sanitary plantation condition (botanical garden, arboretums, squares, etc) and their sanitation system.
3. Phonological peculiarities of harmful insects growth and development at basic forestry enterprise.

Master programme

FOREST RENEWAL AND CULTIVATION

The programme envisages study of technologies in forest sort seed growing, micro cloned reproduction of arboreal plants and samplings, plantation forest growing, rehabilitation of destroyed lands, forest renewal and cultivation on the principles of ecologically oriented silviculture.

Disciplines course chosen by the university	**Semester**	**Credits**
Nursery current technologies	2	5,5
Micro cloned reproduction of arboreal plants	2	5,0
Forest culture methods of rehabilitation of destroyed lands	3	5,0
Industrial methods of forest growing	3	5,0
Ecological principles of forest renewal and cultivation	2	5,0
Forest productivity increase by forest culture methods	3	6,0
Forest sort seed growing	2	4,0
Total		**35,5**
Disciplines course chosen by students		
Forest cultures of green zones	2	3,0
Application of fertilizers in forestry	3	3,0
Total		**6,0**
Total		**41,5**

Proposed topics for master's papers:

1. Influence of silviculture measures on fruiting and seed sowing qualities.
2. Scientific and practical approaches of plantation forest growing at basic forestry enterprise.

Master programme

FOREST MANAGEMENT

The programme trains specialists in forest plantations inventory by current methods, projecting of forestry measures aimed at rational forest use, forest productivity increase, renewal, protection and preservation of forest flora and fauna.

Disciplines course chosen by the university	**Semester**	**Credits**
Special kinds of forest taxation	2	6,0
Forest monitoring	2	4,5
Special kind of forest management	2,3	9,0
Information systems in forestry	2	5,0
GIS technologies in forestry	3	6,0
Modeling of forest productivity	3	5,0
Total		**35,5**
Disciplines course chosen by students		
Economics of nature use	2	3,0
Computer technology in forestry	3	3,0
Total		**6,0**
Total		**41,5**

Proposed topics for master's papers:

1. Analysis and improvement of volume standards of round timbers.
2. Substantiation of models of normal plantations completeness and stock.
3. Forest productivity and ways of forest lands use efficiency increase.

Master programme

MANAGEMENT OF FOREST RESOURCES AND FOREST ENTREPRENEURSHIP

Master programme trains specialists of economic direction for forestry who are able to develop and implement optimal strategies of forest management and forest use at national, regional and local levels.

Disciplines course chosen by the university	**Semester**	**Credits**
Management of forest resources	2,3	5,5
Forestry commodity science	2	4,0
Information systems in forestry	2	4,5
Finance and credit	2	4,0
Economics of nature use	2	4,0
Foreign economic activity in forest complex	2,3	4,5
GIS technologies in forestry	3	5,0
Modeling of forest productivity	3	4,0
Total		**35,5**
Disciplines course chosen by students		
Marketing in forestry	2	3,0
Computer technology in forestry	3	3,0
Total		**6,0**
Total		**41,5**

Proposed topics for master's papers:

1. Evaluation of economic efficiency of forestry resources renewal and use (on the example of forests of basic forestry enterprise).
2. Space structure of forest plantations.
3. Elaboration of business plan for forestry enterprise.

FOREST CERTIFICATION

The programme provides knowledge in ecological certification and standardization in forestry. The disciplines course includes theoretical and practical aspects of ecological certification and standardization, management, marking and audit; forestry management according to the demands of forest certification in accordance with international schemes FSC and PEFC, formation and realization of marketing strategies of certified forest products.

Disciplines course chosen by the university	**Semester**	**Credits**
Certification and standardization	2,3	7,0
Certification of forestry management system	2	5,5
Ecological management	2	5,0
Ecological audit	2	4,5
Economics of nature use	2	4,5
GIS technologies in forestry	3	4,0
Ecological marking	2	5,0
Total		**35,5**
Disciplines course chosen by students		
Standardization and certification in accordance with international scheme FSC	2	3,0
Standardization and certification in accordance with international scheme PEFC	3	3,0
Total		**6,0**
Total		**41,5**

Proposed topics for master's papers:

1. Prospects of certification of basic forestry enterprise in accordance with international scheme FSC.
2. Prospects of certification of basic forestry enterprise in accordance with international scheme PFSC.

RESERVES SCIENCE

The programme envisages study of forest science aspects of reserved territories, their especially valuable forest complexes, phyto diversity of reserves, regimes of preservation, reservation, creation, territorial organization and function of reserves and ecosystem.

Disciplines course chosen by the university	**Semester**	**Credits**
World system of reserved territories	2	5,0
State management and control of natural reserves	2	4,5
Natural reserves projecting, eco monitoring and cadastre	2	5,0
Natural reserves humanity	3	4,0
Reserves forest science	3	6,0
Reserves geo sozology	3	3,5
Forest seportology	3	3,5
History of reserves science	2	4,0
Total		**35,5**
Disciplines course chosen by students		
Biosozology	2	3,0
Natural reserves and ecosystem	2	3,0
Total		**6,0**
Total		**41,5**

Proposed topics for master's papers:

1. Phyto cenosis contents, dynamics and description of forest, meadow and water and marshy formations.
2. Reserves phyto diversity, its rarity and conservation regimes.
3. Systematisation, inner specious changebility, ceno pollution structure, introduction of some arboreal plant species.

BIOTECHNOLOGY IN FORESTRY

The graduates will be able to do researches in biotechnologies creation that are based on application of biosynthetic potential of classical and transgenic organisms for various branches of economy, develop methods of biotechnological processes control, substantiate the directions of scientific researches, be aware of biotechnological, industrial and laboratory equipment, raw material, branch normative demands to finished products.

Disciplines course chosen by the university	**Semester**	**Credits**
Fundamentals of industrial biotechnology	2,3	6,5
Biology of BAS producers and fundamentals of cell engineering	2	6,5
Genetic engineering	2	6,5
Biosafety	2	6,5
Crioconservation	3	6,5
Laboratory research methods *(physiological and biochemical researches of arboreal plants in the process of their ontogenesis)*	2	3,0
Total		**35,5**
Disciplines course chosen by students		
Bioenergetics	3	3,0
Microclone arboreal plants reproduction	3	3,0
Total		**6,0**
Total		**41,5**

Proposed topics for master's papers:

1. Regulative light role in the processes of arboreal plants morphogenesis.
2. The influence of heteroaucsin on plant-regenerates of deciduous species growth and development.
3. The influence of exogenic regulators of growth and explants type on arboreal plants morphogenesis *in-vitro*.
4. Culture of arboreal plants buds.
5. Culture of ginseng tissue as a source of BAS.

RESEARCH- ORIENTED SPECIALIZATION

Master programme

THEORETICAL PRINCIPLES OF FOREST RESOURCES RENEWAL BASED ON FUNDAMENTALS OF ECOLOGICALLY ORIENTED SILVICULTURE

The programme trains specialists in theoretical and practical principles of forest resources renewal based on fundamentals of ecologically oriented silviculture under conditions of different natural and climatic zones.

Disciplines course chosen by the university	**Semester**	**Credits**
Microclone arboreal plants reproduction	2	5,0
Ecological principles of forest renewal and afforestation	2	5,0
Forest productivity increase by silviculture methods	3	6,0
Current technologies of nursery science	2	5,5
Forest cultural methods of rehabilitation of destroyed lands	3	5,0
Industrial methods of forest growing	3	5,0
Sort forest seed growing	2	4,0
Total		**35,5**
Disciplines course chosen by students		
Biology of arboreal plants growth and nutrition	3	3,0
Forest cultural cenoses of urban landscapes	2	3,0
Total		**6,0**
Total		**41,5**

Proposed topics for master's papers:

1. Optimization of substrate for growing of forest and decorative seedlings with closed root system.
2. Peculiarities of growth stimulators to increase pine seeds (forest species) soil germination.

Master programme

FOREST AND AGRICULTURAL LANDSCAPE SCIENCE

The programme includes discipline course in space structures, protective forest plantations management, phytomelioration of urbanized landscapes, forest melioration of highways, monitoring of agricultural forest landscapes and anthropogenic burden on landscape.

Disciplines course chosen by the university	**Semester**	**Credits**
Optimization of agricultural landscapes	3	4,5
Scientific principles of antierosion systems	3	4,0
Erosion science	2	4,0
Theoretical principles of protective afforestation	3	4,5
Systems of soils protection from erosion	2,3	7,0
Hydro technical melioration	2	3,0
Re-cultivation of anthropogenic landscapes	2	3,5
Forest and agricultural landscapes	2	4,0
Total		**34,5**
Disciplines course chosen by students		
Forest melioration of highways	2	3,5
Mechanization of land-reclamation	2	3,5
Total		**7,0**
Total		**41,5**

Proposed topics for master's papers:

1. Evaluation of landscape anthropogenic burdens and its contamination level.
2. Forestry phytomelioration of anthropogenic lands.
3. Complex of measures of protective railways plantations reconstruction.
4. Evaluation of landscape ecological condition.
5. Forest and agricultural landscape resistance to anthropogenic influences.

Master programme

THEORETICAL PRINCIPLES OF FORMATION OF HIGHLY PRODUCTIVE FORESTS BASED ON SUSTAINABLE SILVICULTURE

The programme includes discipline course in biological principles of cleaning cutting, timber stands dynamics, ecological and silviculture peculiarities of side use and non-timber forest products, forests productivity increase by silviculture methods taking into consideration efficiency of highly productive forests creation.

Disciplines course chosen by the university	**Semester**	**Credits**
World silviculture systems	2	7,0
Biological principles of cleaning cutting	3	3,0
Forests productivity increase by silviculture methods	3	5,0
Modeling of forests productivity	2	3,5
Forest ecology	2	3,5
Scientific principles of forest typology	2	3,5
Natural renewal of forest biocenoses	3	2,5
Economic efficiency of highly productive forests creation	3	3,5
Total		**31,5**
Disciplines course chosen by students		
Timber stands dynamics	3	3,0
Ecological and silviculture peculiarities of side use and non-timber forest products	2	7,0
Total		**10,0**
Total		**41,5**

Proposed topics for master's papers:

1. Identification of ways of efficient use of natural prerequisites for the development of recreation enterprise in the forest.
2. Complex of measures to increase forest plantations productivity and quality by silviculture methods.

Master programme

THEORETICAL PRINCIPLES OF MONITORING AND REDUCTION OF FOREST FIRES RISKS

The programme trains specialists in evaluation of forest fire danger, analysis of forest burning and condition of forest protection from fires, economic losses estimation caused by forest fires, elaboration of forest pyrology models and accumulation of forest burning materials and fires forecast.

Disciplines course chosen by the university	**Semester**	**Credits**
Forest burning materials	2	5,0
Forest fires conduct	2	3,5
Influence of weather conditions on forest fire danger	2	3,5
Organization of forest protection from fires	2	5,0
Management of landscapes fire regimes	2	3,5
Technologies of forest fires extinction	3	4,0
Use of controlled firings to manage landscapes	3	4,0
Economic losses estimation caused by forest fires	3	4,0
Total		**32,5**
Disciplines course chosen by students		
Ecology of forest fires	2	3,5
Management of forest fires at regional and global levels	3	5,5
Total		**9,0**
Total		**41,5**

Proposed topics for master's papers:

1. GIS forest fires forecast.
2. Elaboration of forest pyrologic model.

Master programme

BIOLOGICAL AND ENERGETIC PRODUCTIVITY OF FOREST PHYTOCENOSES

Elaboration of standards evaluation of components of trees and timber stands phytomass. Dynamics of forest plantations biological productivity (for example of certain agricultural enterprise). Peculiarities of carbon deposition of arboreal species within a region or an enterprise. Plantation oxygen productivity of urban green zones. Biological productivity and energy capacity of regional or enterprise forests. Peculiarities of growth and modeling of plantations biological productivity indicators dynamics.

Disciplines course chosen by the university	**Semester**	**Credits**
Forest monitoring	2	5,0
GIS technologies in forestry	3	6,0
Modeling of forest productivity	3	4,5
Forest inventory and cadastre	3	5,0
Data banks of forest information	2	5,0
Information systems in forestry	2	5,0
Economics of nature use	2	3,0
Total		**33,5**
Disciplines course chosen by students		
Biological forest productivity and its components	2	5,0
Computer technologies in forestry	3	3,0
Total		**8,0**
Total		**41,5**

Proposed topics for master's papers:

1. Plantation oxygen productivity of urban green zones.
2. Biological productivity and energy capacity of regional or enterprise forests.

Master programme

THEORETICAL AND EXPERIMENTAL PRINCIPLES OF COMPLEX REGISTRATION AND FOREST BIORESOURCES USE

The students study up-to-date computer technologies, optional methods of forest inventory, current methods of forest taxation standards elaboration.

Disciplines course chosen by the university	**Semester**	**Credits**
Forest monitoring	2	4,5
GIS technologies in forestry	3	6,0
Modeling of forest productivity	3	5,0
Special kinds of forest taxation	2	6,0
Special kinds of forest management	2,3	9,0
Information systems in forestry	2	5,0
Total		**35,5**
Disciplines course chosen by students		
Economics of nature use	2	3,0
Optional methods of forest inventory	3	3,0
Total		**6,0**
Total		**41,5**

Proposed topics for master's papers:

1. Elaboration of optional taxation standards of matured plantations.
2. Current growth of forest plantations and elaboration standards of its determination.
3. Peculiarities of taxation texture and commodity structure of timber stands.
4. Peculiarities of growth and modeling of dynamics of plantations main taxation indices.

SPECIALITY
8.092002 „WORD-PROCESSING TECHNOLOGY”

Master programme of industry-oriented specialization

Current wood processing technologies ***Technology of furniture production***	TSC of complex wood resources processing (education building №17, room № 101, tel. 527-81-67) Coordinator – O. O. Pinchevs’ka, doctor of technical sciences, associate professor tel.: 527-81-67

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and forest resources	1	1,0
International standardization, certification of technologies, raw materials, finished products	1	1,0
Strategy of stable nature development and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines course according to the requirements of MES		
Marketing in wood processing	3	2,5
Planning at wood processing enterprises	3	5,0
Foreign economic activity at wood processing enterprises	2	2,5
Labour protection in the branch	2	4,0
Accounting and audit at wood processing enterprises	2	2,0
Mechanic and technological material properties	1,2	6,0
Heat processes of wood processing	1	6,0
Timber modification	2	4,0
Scientific researches and patent science in wood processing	3	2,0
Technology of cabinet wood products and wood house construction	1,2	5,0
Projecting of wood processing enterprises	2	6,0
Projecting of devices for timber drying	1	4,0
Current technologies of furniture enterprises	3	2,0
Technology of specialized wood processing enterprises	3	2,0
Total		**53,0**
Disciplines course chosen by the university	2,3	**6,0**
Disciplines course chosen by students	3	**4,0**
State attestation		
Practice	1,2	10,0
Preparation and defence of master's paper	3	10,0
Total		**20,0**
Total		**90,0**

INDUSTRY- ORIENTED SPECIALIZATION

Master programme

CURRENT WOOD PROCESSING TECHNOLOGIES

The programme trains specialists in development of constructions and technologies of timber materials and products production, determination of their descriptions and quality level, methods of analysis of current technological processes, planning and conducting researches aimed at the optimization and improvement of technological processes of wood processing enterprises.

Disciplines course chosen by the university	**Semester**	**Credits**
Current technologies of construction timber products	2	3,0
Optimization of technological processes of wood processing	3	3,0
Total		**6,0**
Disciplines course chosen by students		
Standardization and qualimetry in wood processing	3	2,0
Physical and chemical principles of timber compositional material formation	3	2,0
Total		**4,0**
Total		**10,0**

Proposed topics for master's papers:

1. Development of constructions and technologies of timber materials (saw timber, work pieces, details from thermal timber, fuel briquettes and grains, package, etc).
2. Substantiation of proposals in timber products improvement.

Master programme

TECHNOLOGY OF FURNITURE PRODUCTION

The students study methods of improvement of technological process of joiner's products production (furniture or other timber products), substantiation of construction decisions in furniture design (joiner's product), advanced technologies of chemical wood processing (waste utilization, timber pyrolisis, soft resin processing, etc).

Disciplines course chosen by the university	**Semester**	**Credits**
Current technologies of trellis timber products	2	3,0
Optimization of technological processes of wood processing	3	3,0
Total		**6,0**
Disciplines course chosen by students		
Standardization and qualimetry in furniture production	3	2,0
Current technologies of timber finishing	3	2,0
Total		**4,0**
Total		**10,0**

Proposed topics for master's papers:

1. Development of constructions and technologies of furniture production of office, housing, public, etc purpose.
2. Substantiation of proposals in furniture production of office, housing, public, etc purpose improvement.

SPECIALITY
8.130402 „PARK GARDENING”

Master programme of industry-oriented specialization

Management in park gardening	TSC of forest management, standardization and forest certification (educational building №1, room № 98, tel. 527-88-00) Coordinator – P. V. Kravets', candidate of agricultural sciences, associate professor tel.: 527-88-00
Decorative gardening ***Landscape architecture*** ***Decorative nursery science*** ***Nature protection park science*** ***Floriculture in greenhouses and on plots*** ***Interior phytodesign*** ***Sport and golf lawns***	TSC of landscape architecture and phytodesign (educational building № 1a, room № 15, tel. 527-82-62) Coordinator – N. O. Oleksiichenko, doctor of agricultural sciences, senior scientific researcher tel.: 527-82-62
Biotechnology in park gardening	TSC of biotechnologies (educational building № 17 room № 216, tel. 527-87-90 Coordinator – O. L. Kliachenko, candidate of biological sciences, associate professor tel. 527-87-90

Master programme of research-oriented specialization

Preservation and use of arboreal species biodiversity ***Phyto design science***	TSC of landscape architecture and phytodesign (educational building № 1a, room № 15, tel. 527-82-62) Coordinator – N. O. Oleksiichenko, doctor of agricultural sciences, senior scientific researcher tel.: 527-82-62
Scientific and theoretical principles of arboreal decorative plants reproduction	TSC of biotechnologies (educational building № 17 room № 216, tel. 527-87-90 Coordinator – O. L. Kliachenko, candidate of biological sciences, associate professor tel. 527-87-90

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Forestry, land and environmental law	1	1,0
Current trends of park gardening art	1	1,0
Strategy of stable nature development and society	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines course according to the requirements of MES		
Decorative gardening	3	6,0
Labour protection	3	3,0
Planning of greenery enterprise	1	3,0
GPO reconstruction and restoration	1	3,0
Arboretum design	1,2	3,0
Woodland parking	1	3,0
Phytodesign of premises	1	3,0
GPO use	2	2,0
Greenhouses	3	2,0
Total		**28,0**
Disciplines course chosen by the university	2,3	**30,0**
Disciplines course chosen by students	2,3	**6,0**
State attestation		
Practice	1,2	10,0
Preparation and defence of master's paper	3	9,0
Total		**19,0**
Total		**90,0**

INDUSTRY- ORIENTED SPECIALIZATION

Master programme

MANAGEMENT IN PARK GARDENING

The programme trains specialists of economic direction for public utilities enterprises who are able to elaborate and implement public and optimal management strategies in park gardening.

Disciplines course chosen by the university	**Semester**	**Credits**
Methods of scientific researches	3	2,0
Accounting and audit	2	4,0
Computer technologies of reserves and park and gardening objects design	2	6,0
Economics of nature use	2	4,0
GIS technologies in park gardening	3	3,0
Management in park gardening	2	4,0
Fundamentals of marketing	2	3,0
Foreign economic activity in park gardening	3	4,0
Total		**30,0**
Disciplines course chosen by students		
Finance and credit	3	3,0
Marketing of park gardening products	3	3,0
Total		6,0
Total		36,0

Proposed topics for master's papers:

1. Peculiarities of foreign economic transactions of entities in park gardening.
2. Financial analysis of economic entity activity in park gardening.

ъ *Master programme*

DECORATIVE GARDENING

The programme trains specialists in problems of landscape gardening of settlements using current computer technologies of reserves and park and gardening objects design.

Disciplines course chosen by the university	**Semester**	**Credits**
Methods of scientific researches	3	2,0
Accounting and audit	2	4,0
Computer technologies of reserves and park and gardening objects design	2	6,0
Soils and soils mixtures	2	3,5
Management and marketing in park gardening	3	3,0
Sort science and seed growing	2	3,0
Recultivation of anthropogenic landscapes	2	4,5
Decorative gardening	3	2,0
Form diversity of decorative arboreal plants	3	2,0
Total		30,0
Disciplines course chosen by students		
Decorative plants protection	3	3,0
World technologies in decorative nursery	3	3,0
Total		6,0
Total		36,0

Proposed topics for master's papers:

1. Organization of flower decorative enterprises (greenhouse complexes) and their profitability, forcing treatment and transportation technologies of bulbous decorative plants and bushes.
2. Arboreal phyto diversity as the basis of hedges, kerbs creation.
3. Historical and cultural and nature protection principles of creation of decorative gardens and landscape phytodesign.

Master programme

LANDSCAPE ARCHITECTURE

The students study current problems of construction of park gardening objects design using current computer technologies.

Disciplines course chosen by the university	**Semester**	**Credits**
Methods of scientific researches	3	2,0
Accounting and audit	2	4,0
Computer technologies of reserves and park and gardening objects design	2	6,0
Soils and soils mixtures	2	3,5
Management and marketing in park gardening	3	3,0
Landscape design	2	3,0
Landscape projecting	3	4,5
Ecological expertise	2	2,0
Park science	3	2,0
Total		**30,0**
Disciplines course chosen by students		
Re-cultivation of anthropogenic landscapes	3	3,0
Form diversity of decorative arboreal plants	3	3,0
Total		**6,0**
Total		**36,0**

Proposed topics for master's papers:

1. Landscape reconstruction of green plantations of common use.
2. Projects of technoparks, business parks, business centers, scientific campus.
3. Planting and improvement of specialized schools, lyceums and colleges.
4. Current tendencies of arboretums creations.

Master programme

DECORATIVE NURSERY SCIENCE

The students study methods and ways of decorative plants planting material growing using biotechnology methods.

Disciplines course chosen by the university	**Semester**	**Credits**
Methods of scientific researches	3	2,0
Accounting and audit	2	4,0
Computer technologies of reserves and park and gardening objects design	2	6,0
Soils and soils mixtures	2	3,5
Management and marketing in park gardening	3	3,0
World technologies in decorative nursery	2	3,0
Legislative base of nursery science	3	2,5
Planting material quality and methods of its evaluation	2	3,0
Arboreal plants growth and mineral nutrition regulation	3	3,0
Total		**30,0**
Disciplines course chosen by students		
Container culture of arboreal plants	3	3,0
Biotechnology methods in decorative gardening	3	3,0
Total		**6,0**
Total		**36,0**

Proposed topics for master's papers:

1. Experience and ways of improvement of decorative planting material production.
2. Selection of components and substratum optimization to produce decorative planting material in container culture.

Master programme

NATURE PROTECTION PARK SCIENCE

The programme envisages the study of forest science aspects of park gardening objects, their phyto diversity and rare contents and storage regimes, natural reserves reservation, creation and function.

Disciplines course chosen by the university	**Semester**	**Credits**
Methods of scientific researches	3	2,0
Accounting and audit	2	4,0
Computer technologies of reserves and park and gardening objects design	2	6,0
Management and marketing in park gardening	3	3,0
Reserves science	2	4,0
Re-cultivation of anthropogenic landscapes	2	2,0
World landscape inheritance	2	2,0
Reserves ecological control	3	2,0
Park science	3	3,0
Ecological expertise	3	2,0
Total		**30,0**
Disciplines course chosen by students		
Biocozology	3	3,0
Phytocenology	3	3,0
Total		**6,0**
Total		**36,0**

Proposed topics for master's papers:

1. Reserves phyto diversity and rare contents and storage regimes.
2. Ecosystems and natural reserves reservation, creation and function.
3. Design peculiarities of perennial decorative plants and their use on park gardening objects.

Master programme

FLORICULTURE IN GREENHOUSES AND ON PLOTS

Development of current technologies of decorative flowers reproduction in greenhouses and on plots. Flower beds design and choice of assortment of decorative plants for flower composition creation.

Disciplines course chosen by the university	**Semester**	**Credits**
Methods of scientific researches	3	2,0
Accounting and audit	2	4,0
Computer technologies of reserves and park and gardening objects design	2	6,0
Soils and soils mixtures	2	3,5
Management and marketing in park gardening	3	3,0
Iridology (biological and ecological aspects of iris sorts)	2	3,0
Lily growing (biological and ecological aspects of lilies sorts)	3	2,5
Technological aspects of bulbous plants growing	2	3,0
Rodology (biological and ecological aspects of roses sorts)	3	3,0
Total		**30,0**
Disciplines course chosen by students		
Flower beds design	3	3,0
World technologies of flowers reproduction	3	3,0
Total		6,0
Total		36,0

Proposed topics for master's papers:

1. Culture in vitro in current technologies of decorative plants reproduction in greenhouses.
2. Influence of exogenic factors on roses oculants germination.

Master programme

INTERIOR PHYTODESIGN

Elaboration of current methods of decorative floriculture of office and premises using current technologies of phyto hothouses, winter gardens design, phyto compositions creation, esthetic phyto landscapes decoration.

Disciplines course chosen by the university	**Semester**	**Credits**
Methods of scientific researches	3	2,0
Accounting and audit	2	4,0
Computer technologies of reserves and park and gardening objects design	2	6,0
Soils and soils mixtures	2	3,5
Management and marketing in park gardening	3	3,0
Decorative floriculture of interiors	2	3,0
Current technologies of phyto hothouses	3	3,0
Esthetics of phyto landscapes	2	2,5
Technological aspects of phyto compositions keeping	3	3,0
Total		**30,0**
Disciplines course chosen by students		
Winter gardens	3	3,0
Bonsai and Feng shui	3	3,0
Total		**6,0**
Total		**36,0**

Proposed topics for master's papers:

1. Choice and substantiation of plants assortment to plant premises interiors.
2. Project of premises interiors planting.

Master programme

SPORT AND GOLF LAWNS

Choice of grass and decorative plants assortment for golf lawns decoration, development of technologies of golf lawns creation and function, reconstruction, protection of playing objects from vermin and pathogenic agents, golf lawns recreation and ecoculture.

Disciplines course chosen by the university	**Semester**	**Credits**
Methods of scientific researches	3	2,0
Accounting and audit	2	4,0
Computer technologies of reserves and park and gardening objects design	2	6,0
Soils and soils mixtures	2	3,5
Management and marketing in park gardening	3	3,0
World golf lawns	2	3,0
Current floriculture assortment	3	3,0
Technologies of golf lawns creation and function	2	2,5
Golf lawns recreation and ecoculture	3	3,0
Total		**30,0**
Disciplines course chosen by students		
Golf lawns reconstruction	3	3,0
Protection of golf lawns from vermin and diseases	3	3,0
Total		**6,0**
Total		**36,0**

Proposed topics for master's papers:

1. Technologies of golf lawns creation.
2. Technological aspects of golf lawns reconstruction.

Master programme

BIOTECHNOLOGY IN PARK GARDENING

The master students are able to do researches in biotechnologies creation based on use of biosynthetic potential of classical and transgenic organisms for park gardening, be aware of biotechnological industrial and laboratory equipment, raw material, branch and normative requirements to finished products.

Disciplines course chosen by the university	**Semester**	**Credits**
Methods of scientific researches	3	2,0
Accounting and audit	2	4,0
Computer technologies of reserves and park and gardening objects design	2	6,0
Soils and soils mixtures	2	3,5
Management and marketing in park gardening	3	3,0
Principles of industrial biotechnology	2	4,0
Biotechnology of BAS producers and principles of cell engineering	3	3,5
Genetic engineering	2	2,0
Biosafety	3	2,0
Total		**30,0**
Disciplines course chosen by students		
Criostorage	3	3,0
Bioenergetics	3	3,0
Total		**6,0**
Total		**36,0**

Proposed topics for master's papers:

1. Regulation of morphogenetic potential of decorative and flower plants *in vitro*.
2. Biotechnological methods of decorative cultures sanitation from virus infection.

RESEARCH- ORIENTED SPECIALIZATION

Master programme

PRESERVATION AND USE OF ARBOREAL SPECIES BIODIVERSITY

Introduction of decorative plants to increase phyto diversity of green plantations. Formation of general appearance of decorative plants. Recreation park science and natural reserves science.

Disciplines course chosen by the university	**Semester**	**Credits**
Methods of scientific researches	3	2,0
Accounting and audit	2	4,0
Computer technologies of reserves and park and gardening objects design	2	6,0
Soils and soils mixtures	2	3,5
Management and marketing in park gardening	3	3,0
World phyto collection	2	3,0
Introduction and adaptation of decorative plants	3	3,0
Artificial change of decorative plants form	2	3,0
Form diversity of decorative arboreal plants	3	2,5
Total		**30,0**
Disciplines course chosen by students		
Natural reserves science	3	3,0
Recreation park science	3	3,0
Total		**6,0**
Total		**36,0**

Proposed topics for master's papers:

1. Scientific methods of species contents and dynamics of development of arboreal plants formations.
2. Scientific principles of protection and arboreal species use in decorative plantations.

Master programme

PHYTO DESIGN SCIENCE

Assortment of arboreal plants and current technologies of phyto hothouses. Scientific methods of phytodesign on different levels of its organization. Resource science of arboreal plants. Phyto design and esthetic evaluation of artificial landscapes. Esthetics of phyto landscapes and park phyto cenology.

Disciplines course chosen by the university	**Semester**	**Credits**
Methods of scientific researches	3	2,0
Accounting and audit	2	4,0
Computer technologies of reserves and park and gardening objects design	2	6,0
Soils and soils mixtures	2	3,5
Management and marketing in park gardening	3	3,0
Landscape phyto design science	2	3,0
Phytosozology of decorative plants	3	3,0
Current technologies of phyto hothouses	2	2,5
Resource science of arboreal plants	3	3,0
Total		**30,0**
Disciplines course chosen by students		
Esthetics of landscapes	3	3,0
Park phytocenology	3	3,0
Total		**6,0**
Total		**36,0**

Proposed topics for master's papers:

1. Scientific methods of phytodesign on different levels of its organization.
2. Phyto design and esthetic evaluation of artificial landscapes.

SCIENTIFIC AND THEORETICAL PRINCIPLES OF ARBOREAL DECORATIVE PLANTS REPRODUCTION

Biotechnology methods in decorative gardening. Sort science and seed science of decorative plants. Form diversity of decorative arboreal plants.

Disciplines course chosen by the university	**Semester**	**Credits**
Methods of scientific researches	3	2,0
Accounting and audit	2	4,0
Computer technologies of reserves and park and gardening objects design	2	6,0
Soils and soils mixtures	2	3,5
Management and marketing in park gardening	3	3,0
Conservation and reproduction of arboreal plants gene fund	2	3,0
Form diversity of decorative arboreal plants	3	3,0
Quality of planting material and methods of its evaluation	2	2,5
Sort science and seed science of decorative plants	3	3,0
Total		**30,0**
Disciplines course chosen by students		
Protection of decorative plants	3	3,0
Methods of biotechnology in decorative gardening	3	3,0
Total		**6,0**
Total		**36,0**

Proposed topics for master's papers:

1. Ecological and biological peculiarities of plants and technologies of their reproduction.
2. Scientific principles of reproduction of decorative arboreal plants and their forms.

MASTER PROGRAMMES OF EDUCATIONAL AND SCIENTIFIC INSTITUTE OF RESOURCES AND LAW SCIENCE

Educational and scientific institute of land resources and law science is involved in educational, research, innovative, methodical, production, information and extension and educative activities to obtain higher education, qualification and specialities in the direction “Geodesy, cartography and land tenure”, “Law” in specialities “Land management and cadastre” and “Law science” aimed at the training of highly qualified specialists in legislative provision of property and land relation regulation, land tenure, nature use, land resources management, land recreation, protection and monitoring, lands use control, state land cadastre, land estimation and boundaries delineation of administrative and territorial units, geoinformation and cartographic support of nature use.

The main task is to train specialists for executive authority bodies in law science and land resources and obtaining qualification at:

- Development of managerial and project decisions as to land protection from harmful anthropogenic influence, increase of land productivity of agricultural and forestry purpose and soils fertility, provision of special regime of land use of nature protection, curative, recreation and historical and cultural purpose, restrictions formation in land use of all categories;
- Substantiation of types of land tenure documents determined by legislation;
- Conducting of state land cadastre and land estimation;
- Geoinformation and cartographic modeling of natural resources conditions and provision of their rational use;
- Research of legislative regulation processes of land and property relations reformation in rural areas, agricultural market development;
- Deep study of theory and methodology and land law, its current problems and legislation in land resources branch;

Master training at ESI of land resources and law science is based on current understanding of land tenure higher education content as the system of knowledge and skills which are formed in the process of training taking into account perspective of land tenure, economy, agricultural, land and ecological law, agriculture, territorial planning, geoinformation and state administration.

Faculties which provide Master training:

Faculty of land tenure

It organizes and coordinates training of specialists in land tenure, lands protection and their use control, geosystem monitoring of the environment and provide cultural and education work among students.

Law faculty

It is involved in educational, research, innovative, methodical, production, information and extension and educative activities to obtain higher education, qualification and specialities in the direction “Law” in speciality “Law science” aimed at the training of highly qualified lawyer who is able to solve problems of juridical support of various spheres of public activity especially in agricultural, land and ecological legal relationships.

The Master training and education process at the educational and scientific institute of land resources and law science envisages production and research specialization in all specialities. This enables graduates to work at agroindustrial and nature protection complexes, scientific institutions or to continue their study at post graduate course. The Bachelors are able to continue their study in specialities of the directions “Specific categories”, “Pedagogics of higher school”, “Quality, standardization and certification”, “Business administration” and in speciality “State service” of the direction “State administration”.

Centers of practical training are State committee of Ukraine in land resources and its territorial bodies, Centre of state land cadastre and its regional branches, State inspection in control of land use and protection and its territorial bodies, scientific research and project institutes of land tenure, Ministry of agricultural policy and its territorial bodies, Ministry of environment protection of Ukraine and its divisions, other enterprises and organizations which conduct land management, land cadastre and land estimation, local bodies of executive authorities and bodies of local self-government, bodies of internal affairs of Ukraine, bodies of public prosecution of Ukraine.

The faculty cooperates with leading foreign higher institutions of Europe and the USA: Ghent university (Belgium), Humboldt university (Berlin) (Germany); universities of Iowa, Louisiana, Minnesota and Purdue University of the USA.

Faculty’s departments cooperate with Moscow state juridical academy (Russian federation), State university in land tenure (Russian federation), Institute of state and law of Byelorussia, Opole university (Poland), Iowa and Indiana state universities (USA), Ghent university (Belgium), Humboldt university (Berlin) (Germany), International university of California (USA) etc.

The faculty's staff take part in international scientific conferences in agricultural, ecological, administrative, constitutional law, theory and history of the state and law.

Every year 15-20 students have practical training on farms of Switzerland, Ireland, Denmark, Germany, Finland.

Specialities:
8.070904 – „Land management and cadastre";
8.060101 – „Law science".

Qualification of Master graduates according to the state classificator of professions of Ukraine:

In speciality 8.070904 „ Land management and cadastre" 2148.2 – engineer in land management, 2148.2 – expert in geosystem monitoring of environment, 2148.2 – expert in distance land probing and aerospace monitoring, 2148.2 – land surveyor, 2148.2 – topographer in cadastre;

In speciality 8.060101 „ Law science" 2421 – lawyer.

Master graduates can be employed at the central body of executive authority in land resources and its territorial divisions, centres of SLC and its branches, research and project institutes of land tenure institute on the position of an engineer in land management, leading and chief specialists. Masters in speciality „Lands protection" can be employed at State land inspection and its territorial bodies on the position of inspectors in control of land use and protection. Master graduates in speciality „Geoinformation systems in land tenure" work at the centres of state land cadastre and its territorial branches on the positions of an expert in geosystem monitoring of environment, an expert in distance land probing and aerospace monitoring. Master graduates in speciality „Estimation of real estate and land" can occupy the positions of estimators, estimators-experts at State committee of land and its territorial divisions, centers of state land cadastre, State inspection in control of lands use and protection, research and project institutes of land tenure, firms that give normative and expert land estimation.

Master graduates in speciality „Law science" can work at central bodies of executive authority in agricultural branches and land resources, their territorial divisions, state agricultural and land inspections, nature protection enterprises, bodies of internal affairs of Ukraine, Security service and public prosecution of Ukraine.

SPECIALITY
8.070904 „LAND MANAGEMENT AND CADASTRE”

Master programme of industry-oriented specialization

Land management and cadastre	TSC of land tenure, cadastre and land value estimation (educational building №6, room №202, tel. 258-05-25) Coordinator – V. M. Kryvov, doctor of agricultural sciences, associate professor Tel.: 257-93-87
Land protection	TSC of land tenure, cadastre and land value estimation (educational building №6, room №202, tel. 258-05-25) Coordinator – O. S. Dorosh, candidate of economical sciences, associate professor tel.: 258-05-25
Geoinformation systems in land tenure	TSC of land tenure, cadastre and land value estimation (educational building №6, room №202, tel. 258-05-25) Coordinator – S. S. Kohan, candidate of agricultural sciences, associate professor tel.: 258-05-25
Estimation of land and real estate	TSC of land tenure, cadastre and land value estimation (educational building №6, room №202, tel. 258-05-25) Coordinator – G. K. Loik, candidate of economical sciences, associate professor tel.: 258-05-25

Master programme of research-oriented specialization

Evaluation and forecast of land quality	TSC of land tenure, cadastre and land value estimation (educational building №6, room №202, tel. 258-05-25) Coordinator – O. S. Dorosh, candidate of economical sciences, associate professor tel.: 258-05-25
Geoinformation monitoring of land resources	TSC of land tenure, cadastre and land value estimation (educational building №6, room №202, tel. 258-05-25) Coordinator – S. S. Kohan, candidate of agricultural sciences, associate professor tel.: 258-05-25

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Strategy of stable nature development and society	1	1,0
World agriculture and food resources	1	1,0
Agrarian, land and environmental law	1	1,0
International standardization, certification of technologies, raw materials, finished products	1	1,0
Total		**5,5**
Compulsory disciplines course according to the requirements of MES		
Scientific foreign language	1	1,5
Pedagogics of higher school	2	1,0
Economic and labour law	1	1,0
Physical training	1	1,0
Methodology and methods of scientific researches	2	1,0
Licensing and patenting of scientific products	3	1,0
Information technologies in scientific researches	3	2,0
Labour protection in the branch	1	1,0
Civil defence	1	1,0
Management of land resources	2	4,0
GIS in cadastre systems	3	4,0
Legislative provision of real estate cadastre	3	4,5
Monitoring and protection of lands	2	4,0
Total		**27,0**
Disciplines course chosen by the university	1,2,3	**14,5**
Disciplines course chosen by students	1,2,3	**13,5**
State attestation		
Practice	1,2	14,5
Preparation and defence of master's paper	3	15,0
Total		**29,5**
Total		**90,0**

INDUSTRY- ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
Law process in land tenure	2	2,0
Organization of land management	1	3,0
Work projecting	2	3,0
Land and real estate market	2	2,0
Economics of land use and land management	3	3,0
Higher education and Boulogne process (optional)	1	1,5
Total		**14,5**

Master programme

LAND MANAGEMENT AND CADASTRE

The programme trains specialists in land tenure and land cadastre who are able to keep records in land tenure and land cadastre on state and regional levels, state and regional programmes of land use and protection, land tenure schemes and technical and economic substantiation of lands of administrative and territorial units use and protection, land tenure projects of boundaries delineation and change of administrative and territorial units, boundaries delineation and organization of natural reserves of curative, recreation and historical and cultural purpose.

Disciplines course chosen by students	Semester	Credits
Automation in land management	1	2,5
Forecast of land use	1	3,0
Land management expertise	2	2,5
Registration of land ownership	3	3,0
Expert land estimation	3	2,5
Computer technologies in land management	3	2,5
Total		**13,5**

Proposed topics for master's papers:

1. Methods of land resources forecast, planning of rational use and protection.
2. Peculiarities of territorial restriction formation in lands use in land tenure schemes of administrative and territorial units.

Master programme

LAND PROTECTION

The programme trains specialists in lands rational use and protection connected with the elaboration and realization of law, organizational, economical, technological and other measures aimed at rational land use, prevention of unreasonable exemption of land of agricultural purpose for non-agricultural needs, protection from harmful anthropogenic influence, soils fertility renewal and increase, forestry lands productivity increase, provision of special regime of natural reserves of curative, recreation and historical and cultural purpose lands use. Special attention is paid to the problems of standardization and regulation in land protection.

Disciplines course chosen by students	**Semester**	**Credits**
Agricultural landscapes formation	1	2,5
Land quality estimation and forecast	1	3,0
Ecological expertise of land tenure decisions	2	2,5
Technological aspects of lands use	3	3,0
Quality estimation of lands	3	2,5
Engineering and technological regulation of land protection	3	2,5
Total		**13,5**

Proposed topics for master's papers:

1. Legal and technical support of state control of rational land use and protection.
2. Agricultural landscape management of lands od agricultural enterprises and administrative units.

Master programme

GEOINFORMATION SYSTEMS IN LAND TENURE

The programme trains specialists in current geoinformation support of land resources management, distance probing of the Earth, systems of automatized projecting in land tenure, automation of processes of state land cadastre conducting and registration of ownership on real estate who are able to implement and apply land information systems in land resources bodies, land cadastre centers, local state administration, local self-government bodies.

Disciplines course chosen by students	**Semester**	**Credits**
Information support in land tenure	1	2,5
Methods of distance probing of land tenure	1	3,0
GIS-analysis and applied geo statistics in land tenure	2	2,5
Fundamentals of ArcInfo	3	3,0
GIS of natural resources	3	2,5
Global system of positioning	3	2,5
Total		**13,5**

Proposed topics for master's papers:

1. Application of information technologies, modeling and up-to-date equipment in creation of cadastre maps, land and other real estate objects estimation i.
2. Use of DPE to renew cadastre plans and maps.

Master programme

ESTIMATION OF LAND AND REAL ESTATE

The students study current approaches to normative and expert estimation of land plots, determination of market value of real estate, economic evaluation of lands and soils appraisal, systems of land estimation automation, expert money estimation of land plots of state and municipal ownership, local and regional databanks about market value of land plots and real estate, civil operations concerning real estate disposal.

Disciplines course chosen by students	**Semester**	**Credits**
Information support of money estimation of lands	1	2,5
Planning of territories development	1	3,0
Methodical support of money estimation of lands	2	2,5
Management of municipal lands	3	3,0
Normative and expert estimation of land plots	3	2,5
Land market and land estimation	3	2,5
Total		**13,5**

Proposed topics for master's papers:

1. Improvement of methods of economic and money land estimation. Methods of soils appraisal.
2. Mass estimation of lands and real estate.

RESEARCH- ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
Law process in land tenure	2	2,0
Organization of land management	1	3,0
Work projecting	2	3,0
Land and real estate market	2	2,0
Economics of land use and land management	3	3,0
Higher education and Boulogne process (optional)	1	1,5
Total		**14,5**

Master programme

EVALUATION AND FORECAST OF LAND QUALITY

The programme trains specialists-land managers for scientific work in solution of urgent problems connected with land estimation and forecast of its quality condition.

Disciplines course chosen by students	**Semester**	**Credits**
Agricultural landscapes formation	1	2,5
Land quality estimation and forecast	1	3,0
Ecological expertise of land tenure decisions	2	2,5
Technological aspects of lands use	3	3,0
Quality estimation of lands	3	2,5
Engineering and technological regulation of land protection	3	2,5
Total		**13,5**

Proposed topics for master's papers:

1. Ecological and economic estimation of restrictions and legal burden in agricultural land use.
2. Optimization of land use as a component of organization and economic mechanism of land resources management.

Master programme

GEOINFORMATION MONITORING OF LAND RESOURCES

The programme trains specialists-land managers for scientific work in ways of geoinformation technologies use in land resources monitoring, analysis of information of DEP, estimation and forecast of further land resources use.

Disciplines course chosen by students	**Semester**	**Credits**
Information support in land tenure	1	2,5
Methods of distance probing of land tenure	1	3,0
GIS-analysis and applied geo statistics in land tenure	2	2,5
Fundamentals of ArcInfo	3	3,0
GIS of natural resources	3	2,5
Global system of positioning	3	2,5
Total		**13,5**

Proposed topics for master's papers:

1. Analysis and evaluation of transformation processes in land use by geoinformation and cartography means.
2. Substantiation of principles of estimation of lands of agricultural purpose.

SPECIALITY
8.060101 „LAW SCIENCE”

Master programme of industry-oriented specialization

Agricultural law	TSC of Euro integration of land, agricultural and ecological law of Ukraine (educational building №6, room №225, tel. 257-33-10) Coordinator – V. M. Yermolenko, doctor of juridical sciences, professor tel.: 257-33-10
Land law	TSC of Euro integration of land, agricultural and ecological law of Ukraine (educational building №6, room №225, tel. 257-33-10) Coordinator – V. M. Yermolenko, doctor of juridical sciences, professor tel.: 257-33-10

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products	1	1,0
Strategy of stable nature development and society	1	1,0
Business foreign language	1	1,5
Total		**6,0**
Compulsory disciplines course according to the requirements of MES		
Current problems of agricultural law	2	5,0
Current problems of land law	1	5,0
Problems of ecological law	2	5,0
Theoretical problems of civil law	1,2	5,0
Administrative jurisdiction in agricultural sector	1	3,0
Pedagogics of higher school	1	4,0
Legal support of agricultural products quality and safety	2	5,0
Total		**32,0**
Disciplines course chosen by the university	2,3	**25,0**
Disciplines course chosen by students	1,2,3	**14,0**
State attestation		
Practice	1,2	8,0
Preparation and defence of master's paper	3	5,0
Total		**13,0**
Total		**90,0**

INDUSTRY- ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
Current problems of agricultural legislation of foreign countries	2	4,0
Methods of teaching of juridical disciplines at higher educational institutions	2	8,0
Problems of legal regulation of land mortgage	3	3,0
Current problems of claims and pretentions activity of agricultural enterprises	3	4,0
Legal principles of expert lands estimation	3	3,0
Legal problems of rational land resources use	3	3,0
Total		**25,0**

Master programme

AGRICULTURAL LAW

Regulation of processes of land and property relations in rural areas reformation, elaboration of concept of agricultural policy of Ukraine, formation of system of management and control bodies in AIC, improvement of state administration in environment protection, ecological human rights guaranty in Ukraine, elaboration of scientifically substantiated approaches to the realization of civil transformations in legislation.

Disciplines course chosen by students	Semester	Credits
Current problems of customs control of agricultural products	3	3,0
Problems of legal regulation of agricultural stock exchanges activity	3	3,0
Current problems of judicial expertise organization and making	3	3,0
Current problems of crime prevention in agrarian sector of economy	3	3,0
Organization of juridical service at agricultural enterprises	3	2,0
Total		**14,0**

Proposed topics for master's papers:

1. Legal regulation of cattle breeding in Ukraine.
2. Legal regulation of investment in agricultural sector of Ukraine.
3. Legal regulation of risks insurance in plant growing in Ukraine.
4. Legal regulation of agrotechnical service provision in Ukrainian agriculture.

Master programme

LAND LAW

Disclosure of object reasons of the necessity of land reform, ways of investment attraction into AIC, legal aspects of agricultural cooperation formation and development under agricultural reform conditions, problems of juridical responsibility for ecological crimes, principles, forms and methods of executive authority bodies in agriculture, land resources and ecology.

Disciplines course chosen by students	**Semester**	**Credits**
Current problems of land law	1	6,0
Problems of realization of land ownership	2	2,0
Land cadastre	2	3,0
Problems of legal regulation of land mortgage	2	3,0
Total		**14,0**

Proposed topics for master's papers:

1. Restriction and legal burden on land ownership: problems of legal regulation.
2. Legal regime of lands of water reserves of Ukraine.
3. Legal regime of lands of municipal ownership.
4. Legal regime of lands of forest resources.
5. Legal regulation of land plots alienation.

MASTER PROGRAMMES OF EDUCATIONAL AND SCIENTIFIC INSTITUTE OF BUSINESS

Educational and scientific institute of business provides education, research, innovation, methods, research and production, extension, to obtain higher education and qualification in the following directions: “Economics and entrepreneurship”, “Management”, “Specific categories” and specialities of these directions. These specialities are directed to the solution of current life scientific problems, research and development of up-to-date alternative agrotechnologies, diagnostics systems, elaboration and analysis of economic decisions, optimization of parameters of management structure improvement, effective social activity, use of motivation methods to raise labour efficiency.

Faculties that provide the administration of Master programmes:

Faculty of agricultural management

It organizes and coordinates the training of specialists with wide range of interests in economic and ecologically efficient agricultural management, and also provides cultural and educational activity among students.

Faculty of economics

Organizes and coordinates the training of specialists who are good at organization, production and economic activity of enterprises, institutions and organizations of different types, master current agricultural and information technologies; that are able to occupy the top positions. The faculty provides cultural and educational activity among students.

The peculiarities of training and educational process organization for Master students of institute of business are in production, research and management specialization for each speciality. These enable graduates to work using efficient and ecological technologies, applying managerial methods of market factors modeling, risks forecasting and reduction of their influence, introduction of scientific products in agricultural production. The faculty graduates (Bachelors) have the possibility to continue their study in the specialities referred to the direction “Specific categories”: “Business Administration”, “Pedagogics of higher school”, “Quality, standardization and certification”, and in the speciality “State administration” of the direction “State management”.

The objective of Master programme in speciality “Administrative management” is specialists training for practical management. The programme is aimed at proper individual training and education of a modern manager of technological direction, and a specialist who is able to make production and scientific decisions concerning anticrisis management, efficient development of agrarian enterprises and innovation.

Centres for Master practical training are SD NULES of Ukraine “Agronomy research station”; SD NULES of Ukraine “Velyka Snitynka TRF named after O. V. Muzychenko”; SD NULES of Ukraine TRF „vorzel’”, SD NULES of Ukraine “Boiarka forest research station”, Ukrainian laboratory of Quality and safety of AIC Products; Ministry of agricultural policy of Ukraine; Ministry of economy of Ukraine; Institute of Agricultural markets development; National scientific centre „Institute of arable farming of UAAS”; Ukragrolising; Joint stock company “Galakton”; Agrarian firm “Svitanok”; Ltd. “Myronivka hlibproduct”; Agor-soiuz corporation, PLC "Poultry farm Margus" GREEN CROSS UKRAINE, TSC “IMEC” SD „SPC-Lenbke", firm "Niedera", TRF breed poultry plant named after Frunze NULES of Ukraine ; SD PLC “Agro Inter”, Ukrainian stock exchange (Ltd. “Ukrainian inter-banking currency exchange”; “Ukrainian stock exchange”; Prydniprovs’ka stock exchange); insurance institutions of Ukraine (Joint stock “Insurance company “Universal’na”; “Oranta”); commercial banks of Ukraine (Ltd “Pryvat Bank”, “Praveks-bank”, “Del’ta babk”; “Raiffaizen bank Aval’”; “Nadra”), etc.

International contacts are established with leading educational institutions of Europe, Japan and the USA: Wageningen University (Netherlands), Tokio Agricultural university (Japan), Ghent University (Belgium), Ghumbold University (Berlin), Weihenstephan University of Applied sciences (Germany), Anhalt University (Bernburg, Germany), Nitra Agricultural University (Slovakia), Institute of Agricultural Development in Central and Eastern Europe (Germany), Iowa, Minnesota, Louisiana and Purdue Universities (USA), Warsaw University of Life Sciences (Poland), Czech University of life Sciences (Czech Republic), Cracow Agricultural University (Poland), Shent Isctvan University (Hungary).

Mutual Master programme “Master of Business Administration in Agriculture (MBA-agr)” is conducted between Agricultural management Faculty and Weihenstephan University of Applied sciences (Germany). Its graduates get the diplomas of higher education of both universities and certificates.

Researches of the institute make joint projects with:

- Federal Ministry of food, consumer rights protection and agriculture (Germany), Leibnitz Institute of Agricultural Development in Central and Eastern Europe (IAMO), t. Galle. (Zaale), Germany), “Reformation of central and regional structures of agrarian administration in Ukraine”;
- FAO UNO, “Strategy formation and increase of service level of National agroinformation system”;
- Weihenstephan University of Applied sciences (Germany), “International MBA network in agribusiness ”, graduates get both Ukrainian and European diplomas;
- Anhalt University of Applied Sciences (Germany) – International Master programme MFA «Management, food industry, agribusiness», graduates get both Ukrainian and European diplomas;
- Ghent University (Belgium), Ghumbold University (Berlin) - “International project within TEMPUS-TASIS “Extension and improvement of scientific methods in Masters and post-graduates training ».
- Wageningen University (Netherlands) – International Master programme «Management, economics and study of consumers’ behaviour, graduates get both Ukrainian and European diplomas.

Yearly 150-200 students have practical training on the farms in Switzerland, Ireland, Denmark, Germany and Finland.

Master programmes in specialities “Accounting and Audit”, “Economy of an Enterprise”, “Finance” are conducted by faculty of Economics and Wageningen University (Netherlands), graduates get both Ukrainian and European diplomas.

Specialities:

8.050206 – “Management of international foreign activity”;
8.050201 – “Management of organizations” ;
8.050108 – “Marketing”;
8.050102 – “Economic cybernetics”;
8.000007– “Administrative management”.
8.050107 – “Economy of enterprises”;
8.050106 – “Accounting and audit”;
8.050104 – “Finance”;
8.050114 – “Taxation”

Qualification of Master graduates according to the state classificator of professions of Ukraine:

In speciality 8.050206 „ Management of international foreign activity ″ 1227 – chief administrator (at commercial enterprises); 1229.1 – head of division; 1229.3 – manager – chief specialist; 1229.3 – head of the service; 1229.4 – head of practical training (industrial, training); 1229.4 – head of industrial practice; 1229.4 – head of education and scientific base; 1229.4 – head of the training study; 1229.4 – head of the course; 1229.4 – head of a laboratory; 1229.7 – chief inspector; 1229.7 – head of the consulting office; 1229.7 – head of the department; 1231 – chief of the bureau (functional subdivision); 1235 – chief of foreign cooperation department; 1235 – chief of logistic supply department; 1311 – head of the cooperative society; 1312 – head of the industrial cooperative society; 1312 – director (manager) of small industrial enterprise (company); 1314 – director (manager) of small trade company, shop manager; 1317 – director of an agency (trade, advertising etc); 1319 – director (manager) of small enterprise in the sphere of education, culture.; 1475.3 – manager in foreign economic relations; 1475.4 – manager in personnel, manager in supply, manager in sales; 2310.2 – assistant, lecturer of higher educational institutions; 2320 – lecturer of professional educational institution; 2351.1 – scientific officer (methods of teaching); 2359.1 – scientific officer (in other branches of training); 2359.2 – lecturer; 2419.1 – scientific officer (marketing, entrepreneurship efficiency, products sales); 2419.2 – expert in foreign economic problems, sales economist, public relations specialist; 2413.1 – scientific officer (stock transactions); 2419.3 – consultant (state authority bodies); 2441.2 – economist in negotiations and presentations, economy adviser, consultant in economy, observer in economy, economist in logistic supply, in negotiations and presentations; 2419.2 – specialists in marketing, entrepreneurship efficiency, finance, production of rationalization, intellectual property and innovation; 3415 – commercial agent, sales representative, commissioner of the cattle import office; 3423 – personnel manager, manager of foreign navigation personnel; 3431 – consultant (in state authority bodies, executive committee); 3434 – analyst, analyst in main activity; 3436.1 – assistants of heads of enterprises, institutions and organizations; 3436.2 – assistants of heads of industrial and other main subdivisions; 3436.3 – assistant of heads of small enterprises without administration; 3340 – teacher in professional training; 3441 – customs officer; 3449 – export officer.

In speciality 8.050201 „ Management of organizations″ 1229.1 – head of division; 1229.3 – chief-main specialist; 1229.3 – head of the service; 1231 – chief of the bureau (functional subdivision); 1311 – head of the cooperative society; 1312 – head of the industrial cooperative society; 1312 – director (manager) of small industrial enterprise (company); 1314 – director (manager) of small trade company, shop manager; 1439.8 – manager in power production and distribution 1477.1 – personnel manager, advertising manager; 1475.4 – supply manager, sales manager logistic manger; 1491 – manager of enterprise; 1479 – consultancy manager; 2310.2 – assistant, lecturer of higher educational institutions; 2320 – lecturer of professional educational institution; 2351.1 – scientific officer (methods of teaching); 2359.1 – scientific officer (in other branches of training); 2359.2 – lecturer; 2419.1 – scientific officer (marketing, entrepreneurship efficiency, products sales); 2412.1 – scientific officer (labour and employment); 2412.2 –- labour economist, engineer in labour organization and regulation, personnel training, professional adaptation, analyst in labour market, employment; 2419.2 – public relation manager, specialist in

entrepreneur efficiency, production rationalization, methods of sales markets expansion, commodity market research, standardization, certification and quality; 2413.1 - scientific officer (stock transactions); 2419.3 – consultant (state authority bodies), specialist in personnel and state service; 2419.2 – specialists in marketing, entrepreneurship efficiency, finance, production of rationalization, intellectual property and innovation; 2441.2 – economist in negotiations and presentations, economy adviser, consultant in economy, observer in economy, economist in logistic supply, in negotiations and presentations; 3431 – consultant (in state authority bodies, executive committee); 3434 – analyst, analyst in main activity; 3340 – teacher in professional training; 3436.1 – assistants of directors of enterprises, institutions and organizations; 3436.2 – assistants of heads of industrial and other main subdivisions; 3436.3 – assistant of heads of small enterprises without administration.

In speciality 8.050108 „ Marketing*"* 1210.1 – general manager (head, president etc.) of enterprises (associations, corporations, concerns etc.), head of reorganization, board director, director of enterprise, director of information computing centre, director of division, director of representation, director of subsidiary, manager, director of the centre; 1233 – commercial director, manager of sales department (marketing), manager of commercial department; 1234 – manager of the department (in advertising and public relations); 1235 – logistic manager, head of the administration; 1475.4 – administrative managers, logistic manager, supply manager, sales managers, foreign economic activity managers, managers in accounting, market research, study of public opinion, commercial managers; 1476.1 – advertising managers; 2419 – specialists in entrepreneurship efficiency, specialist in methods of sales market expansion; 2419.1 – scientific officer (marketing, entrepreneurship efficiency, production realization); 2310.2 – assistant, lecturer of higher educational institutions; 2320 – lecturer of professional educational institution; 2351.1 – scientific officer (methods of teaching); 2359.1 – scientific officer (in other branches of training); 2359.2 – lecturer; 2419.1 – specialists in marketing, entrepreneurship efficiency, finance, production of rationalization, intellectual property and innovation.

In speciality 8.050102 „Economic cybernetics " 1210 – general manager (head, president etc.) of enterprises (associations, corporations, concerns etc.), head of reorganization, board director, director of enterprise, director of information computing centre, director of division, director of representation, director of subsidiary, manager, director of the centre; 1236 – chief programmer, main specialist in electric equipment, head of the centre (computing, information and computing); 2131 – administrator in database, data administrator, access administrator, task administrator, system administrator, analyst of computer systems, analyst of computer databank, engineer in automatized production control systems, engineer in computer systems, engineer in computer software; 2132 – scientific officer (programming), engineer - programmer, system programmer, programmer (database), programmer; 2139 – engineer in computer use, scientific officer (computing branch); 2310.2 – assistant, lecturer of higher educational institutions; 2320 – lecturer of professional educational institution; 2351.1 – scientific officer (methods of teaching); 2359.1 – scientific officer (in other branches of training); 2359.2 - lecturer.

In speciality 8.0000007 „Administrative management" 1210 – general manager (head, president etc.) of enterprises (associations, corporations, concerns etc.), head of reorganization, board director, director of enterprise, director of information computing centre, director of division, director of representation, director of subsidiary,

manager, director of the centre; 1229.7 – department manager; 1231 – head of department, head of administration; 1238 – head of the projects and programmes in real sector; 1411 – manager of water resources use; 1412 – forestry managers; 1469 – managers in different kinds of financial mediation; 1439.8 – manager in power production and distribution; 1467 – manager in subsidiary activity in finance; 1468 – manager in subsidiary activity in insurance; 1469 – manager in financial mediation; 1471 – manager in real estate for third party; 1477.1 – personnel manager, advertising manger; 1472 – manger in machinery and equipment leasing; 1473 – manger in information support; 1479 – consultancy manager; 1475.4 – administrative manager, logistic managers, supply managers, sales managers, foreign activity managers, accountant managers, market research managers, managers in public opinion study, commercial managers ; 1476.1 – advertising managers; 2310.2 – assistant, lecturer of higher educational institutions; 2320 – lecturer of professional educational institution; 2351.1 – scientific officer (methods of teaching); 2359.1 – scientific officer (in other branches of training); 2359.1 – lecturer; 2419.2 – specialists in marketing, entrepreneurship efficiency, finance, production of rationalization, intellectual property and innovation; 3436.1 – assistants of directors of enterprises, institutions and organizations; 3436.2 – assistants of heads of industrial and other main subdivisions; 3436.3 – assistant of heads of small enterprises without administration;

In speciality 8.050107 „ Economy of enterprises" 1210.1 – head and head assistant of enterprise economic department, associations, AIC companies and AIC spheres; 1221 – head and head assistant of administrative divisions of self-government bodies (rural, district council, district and regional administration); 2441.2 – economists-analysts of AIC enterprises (according to the types of economic activity); 1223.2 – heads of commodity, agricultural, industrial commodity stock exchanges;

In speciality 8.050106 „ Accounting and audit" 1231 – chief accountant; 3433 – accountant; 2411.2 – auditor; 2411.2 – accountant-auditor; 2411.2 – accountant-expert; 2419.3 – specialist-accountant; 1231 – chief auditor; 1231 – head of control-auditing department; 1231 – head of centralized accounts department.

In speciality 8.050104 „ Finance" 1231 – chief economist; 1231 – finance director; 1231 – head of finance department; 2441.2 – economist; 2441.2 – finance economist; 2441.2 – economist in planning; economy adviser; 1460 – finance manager; 1461 – manager in money mediation; 1462 – manager in financial leasing; 1465 – manager in life insurance and saving; 1466 – manager in pension insurance; 1468 – manager in finance subsidiary;

In speciality 8.050114 „ Taxation" 1210.1 – heads, assistants, executives of tax divisions of regional STA, district STI; 3442 – inspectors of tax service.

Master graduates can be employed at agricultural enterprises of different forms of ownership, state administration, science and research institutions of NAS of Ukraine and UAAS, departments of Ministry of agricultural policy of Ukraine and agricultural enterprises, regional and district agricultural administrations, leading agroindustrial enterprises, budget and bank institutions, science and research institutions of NAS of Ukraine and UAAS, etc.

SPECIALITY 8.050206 "MANAGEMENT OF FOREIGN INTERNATIONAL ACTIVITY"

Master programme of industry-oriented direction

Management of foreign international activity	TSC of agricultural management, marketing, AIC products quality management. (educational building №10, room №315, tel.527-86-51 Coordinator – L. Dibrova, candidate of economic sciences, associate professor, tel.: 527-86-51

Master programme of research-oriented direction

Research of world condition of agricultural markets	TSC of agricultural management, marketing, AIC products quality management. (educational building №10, room №315, tel.527-86-51 Coordinator – L. Dibrova, candidate of economic sciences, associate professor, tel.: 527-86-51

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines course according to the requirements of MES		
Methods of teaching in higher school	1	1,0
Corporate management	1	3,0
Strategy management	1	3,0
International marketing	1	3,0
Management of foreign international activity	2	4,0
International credit, payment and currency operations	2	3,0
Business foreign language	2	5,0
Principles of management consulting	2	2,0
Methodology and organization of scientific researches	2	2,0
Total		**26,0**
Disciplines course chosen by the university	2	**10,0**
Disciplines course chosen by students	2	**8,0**
State Attestation		
Practice	2	4,0
Preparation and defense of master's paper	2	5,0
Total		**9,0**
Total		**60,0**

INDUSTRY-ORIENTED SPECIALIZATION

Disciplines courses chosen by the university	**Semester**	**Credits**
Business protocol and negotiation	1	2,0
Agricultural policy	2	2,0
Organization and methods of foreign transactions	2	2,0
International economic activity	2	2,0
Electronic trading	2	2,0
Total		**10,0**

Master programme

MANAGEMENT OF FOREIGN ECONOMIC ACTIVITY

The programme trains specialists for regulation of foreign economic activity using current economic methods of determination and forecast of foreign economic transactions.

Disciplines course chosen by students	**Semester**	**credits**
Business game „Business-management”	1	2,0
Advertising management	1	2,0
Logistics in foreign economic activity	2	2,0
Geoinformation systems	2	2,0
Total		**8,0**

Proposed topics for master's papers :

1. Competitive strategy formation of foreign economic activity of an agroindustrial enterprise.
2. Peculiarities of foreign economic activity management and its main development directions in Ukraine.
3. Information support of decision making in management of an enterprise foreign economic activity.
4. Organization and economic mechanism of joint-venture formation and activity in Ukraine.

RESEARCH-ORIENTED SPECIALIZATION

Disciplines courses chosen by the university	Semester	Credits
Business protocol and negotiation	1	2,0
Agricultural policy	2	2,0
Organization and methods of foreign transactions	2	2,0
International economic activity	2	2,0
Electronic trading	2	2,0
Total		**10,0**

Master programme

RESEARCH OF WORLD OF AGRICULTURAL MARKETS CONDITION

Programme trains researchers for scientific work to elaborate methods of short- and long-run forecast of foreign economic activity indicators and foreign markets entrance strategy paying attention to influence factors on international trade development, tariff and non-tariff mechanisms of export and import transactions regulation.

Disciplines course chosen by students	Semester	Credits
International customs regulation	1	2,0
Mathematic modeling in management and marketing	2	2,0
Foreign economic activity organization and regulation	2	2,0
Modeling in foreign economic activity planning and forecasting	2	2,0
Total		**8,0**

Proposed topics for master's papers:

1. World condition of market of agricultural products (according to types) and processing.
2. Strategy and mechanism of foreign economic security of Ukraine support.
3. Regulation of export of agricultural products of Ukraine.
4. Management of food product quality of Ukraine.

SPECIALTY
8.050201 “MANAGEMENT OF ORGANIZATIONS”

Master programme of industry-oriented specialization

Information systems in management	TSC of information and broadcast support in agrarian and nature protection spheres (educational building №10, room №501, tel.527-86-07 Coordinator –M. Shvydenko, prof., doctor of economic sciences tel.: 527-86-07
Management in commodity and service market	TSC of agricultural management, marketing and management of AIC product quality (educational building №10, room №315, tel. 527-85-66) Coordinator – V. Gor’ovyi, prof., doctor of economic sciences tel.: 527-85-66
Quality management	TSC of agricultural management, marketing and management of AIC product quality (educational building №10, room №315, tel. 527-85-66) Coordinator – V. Gor’ovyi, prof., doctor of economic sciences tel.: 527-85-66 ULPQS (educational building. №3, room №62, tel.527-88-54 Coordinator – S. Mel’nychuk, doctor of biological sciences, professor, correspondence-member of UAAS tel.: 527-88-54
Information and consulting activity	Department of agricultural consulting and service (educational building. №3, room №62, tel.527-80-61) Coordinator – T. Kal’na-Dubiniuk, doctor of economic sciences, professor tel.: 527-80-61

Master programme of research-oriented specialization

Scientific approaches of management efficiency provision in commodity and service market	TSC of agricultural management, marketing and management of AIC product quality (educational building №10, room №315, tel. 527-85-66) Coordinator – V. Gor'ovyi, prof., doctor of economic sciences tel.: 527-85-66

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land an d environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines course according to the requirements of MES		
Psychology management	1	1,0
Conflict sciences	1	1,0
Investment management	1	3,0
Innovation management	1	3,0
Strategic management	1	3,0
Principles of administrative consulting	2	2,0
Corporate management	2	3,0
Management of an organization	2	2,0
Teaching methods at higher school	2	1,0
Methodology and organization of scientific researches	2	2,0
Total		**21,0**
Disciplines course chosen by the university	2	**15,0**
Disciplines course chosen by students	2	**8,0**
State Attestation		
Practice	2	4,0
Preparation and defense of master's paper	2	5,0
Total		**9,0**
Total		**60,0**

INDUSTRY-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	**Semester**	**Credits**
Business protocol and negotiation	1	2,0
Agricultural policy	1	2,0
Advertising management	1	2,0
Financial management	1	2,0
Project management	2	2,0
Electronic trading	2	2,0
Geoinformation systems	2	1,0
Business game „Business-management”	2	2,0
Total		**15,0**

Master programme

MANAGEMENT IN COMMODITY AND SERVICE MARKET

The programme trains specialists for management of market infrastructure, internal factors analysis and influence of external competitive environment on product and enterprise competitive advantages formation.

Disciplines course chosen by students	**Semester**	**Credits**
Management of marketing communication	1	1,0
Management of enterprise potential	1	1,0
Management of enterprise activity in market	2	2,0
Management of product competitiveness	2	2,0
Management of market infrastructure	2	2,0
Total		**8,0**

Proposed topics for master's papers:

1. Formation of management structures of organizational systems adapted to market
2. Strategies of enterprise structures competitiveness provision
3. Management organization in plant growing and its improvement directions
4. Management organization in livestock breeding and its improvement directions

Master programme

QUALITY MANAGEMENT

The programme trains specialists for formation of quality management system paying attention to the objectives and policy in quality product information management, methods of determination and analysis of quality indicators, improvement of processes of function of quality provision system.

Disciplines course chosen by students	**Semester**	**Credits**
Complex system of quality product management	1	2,0
Information management of labour quality	1	2,0
Quality potential management	2	2,0
Quality management in corporation	2	2,0
Total		**8,0**

Proposed topics for master's papers:

1. Formation of the portfolio of strategies of enterprise competitiveness provision
2. Management quality products at agricultural enterprise
3. Improvement of product quality management system
4. Ways of increase of economic efficiency of new product quality level at an enterprise

Master programme

INFORMATION AND CONSULTING ACTIVITY

The programme trains specialists for information and consulting activity, who are able to organize consulting institutions using current methods, elaborate and evaluate programmes and supply consulting service.

Disciplines course chosen by students	**Semester**	**Credits**
Public relations	1	2,0
Information and consulting activity organization	1	2,0
Information and consulting activity planning	2	2,0
Organization of training in information and consulting activity	2	1,0
Record management in information and consulting activity	2	1,0
Total		**8,0**

Proposed topics for master's papers:

1. Information and consulting support of organic farms development management
2. Information and consulting support of financial management
3. Information and consulting support of AIC marketing processes management

Master programme

INFORMATION SYSTEMS IN MANAGEMENT

The programme trains specialists for creation and support of function of information systems in management and automized systems of enterprise and organization management..

Disciplines included in Master programmes	**Semester**	**Credits**
Disciplines course chosen by students		
Data base in management systems	1	2,0
Electronic trading and broadcast	1	2,0
Methods of presentation and "Web-design"	1	2,0
Current information systems	2	2,0
Total		**8,0**

Proposed topics for master's papers:

1. Information management of organic production at an agricultural enterprise.
2. Organization of information system of agricultural enterprise management and direction of its improvement.
3. Formation of efficient system of management information support

RESEARCH-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
Business protocol and negotiation	1	2,0
Agricultural policy	1	2,0
Advertising management	1	2,0
Financial management	1	2,0
Project management	2	2,0
Electronic trading	2	2,0
Geoinformation systems	2	1,0
Business game „Business-management”	2	2,0
Total		**15,0**

Master programme

SCIENTIFIC APPROACHES OF MANAGEMENT EFFICIENCY PROVISION IN COMMODITY AND SERVICE MARKET

The programme trains specialists for enterprises management in commodity and service market that are able to develop planning system in commodity and service market and control marketing channels.

Disciplines course chosen by students	Semester	Credits
Mathematical models in management and marketing	1	3,0
Financial reorganization and bankruptcy management	2	2,0
Business planning of innovation project	2	3,0
Total		**8,0**

Proposed topics for master’s papers:

1. Organization and economic mechanism of management projecting
2. Choice and substantiation of development strategy model at an enterprise
3. Competitive and monopoly relations management in agricultural production
4. Economic and mathematical modeling and forecast of enterprises activity

SPECIALITY
8.050108 "MARKETING"

Master programmes of industry-oriented specialization

Logistics	TSC of agricultural management, marketing and AIC product quality management (educational building №10, room №402, tel.527-86-04 Coordinator – S. Chebotar, professor, candidate of economic sciences tel.: 527-86-04
Advertising	TSC of agricultural management, marketing and AIC product quality management (educational building №10, room №402, tel.527-86-04 Coordinator – S. Chebotar, professor, candidate of economic sciences tel.: 527-86-04
Commercial and intermediate activity	TSC of agricultural management, marketing and AIC product quality management (educational building №10, room №402, tel.527-86-04 Coordinator – S. Chebotar, professor, candidate of economic sciences tel.: 527-86-04
International trade	TSC of agricultural management, marketing and AIC product quality management (educational building №10, room №402, tel.527-86-04 Coordinator – S. Chebotar, professor, candidate of economic

	sciences tel.: 527-86-04

Master programme of research-oriented specialization

Scientific and methodical principles of marketing and international trade under conditions of WTO entrance	TSC of agricultural management, marketing and AIC product quality management (educational building №10, room №402, tel.527-86-04 Coordinator – S. Chebotar, professor, candidate of economic sciences tel.: 527-86-04

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines course according to the requirements of MES		
Strategy marketing	1	3,0
Financial management	1	3,0
Marketing management	1	3,0
International management	1	3,0
Human resources management	2	3,0
Commodity and innovation policy	2	3,0
Advertising management	2	3,0
Total		**21,0**
Disciplines course chosen by the university	2	**16,0**
Disciplines course chosen by students	2	**8,0**
State Attestation		
Practice	2	4,0
Preparation and defense of master's paper	2	4,0
Total		**8,0**
Total		**60,0**

PRODUCTION-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	**Semester**	**Credits**
Forecast methods in market researches	1	2,0
Business protocol and negotiation	1	2,0
Marketing policy of distribution	2	3,0
Quantative methods of decision making	2	2,0
Consumer behavior	2	3,0
Agrarian policy	2	2,0
Commercial activity of intermediate enterprises	2	3,0
Total		**16,0**

Master programme

LOGISTICS

The programme trains top managers that are creative in their business activity and are able to use innovative methods in logistics.

Disciplines course chosen by students	**Semester**	**Credits**
Transport logistics	1	2,0
Mathematical models in logistics	1	2,0
Logistics in foreign economic activity	1	2,0
Project management	2	2,0
Total		**8,0**

Proposed topics for master's papers:

1. Substantiation of marketing policy of distribution
2. Organization of efficient advertising campaign in domestic market
3. Japanese concepts of current logistics development (KANAN, JUST IN TIME)
4. Marketing management of enterprise commodity range

Master programme

ADVERTISING

The programme trains specialists for management of advertising projects, advertising project organization advertising project quality management, taking into account time factor on the possibility of advertising project realization.

Disciplines course chosen by students	**Semester**	**Credits**
Advertizing projects management	1	2,0
Service marketing	1	2,0
Advertisement psychology	1	2,0
Creativeness in advertising	2	2,0
Total		**8,0**

Proposed topics for master's papers:

1. Enterprise price policy efficiency in domestic market
2. Public relations system as an effective marketing instrument
3. Use of integrated marketing communications to provide enterprise stability in the market
4. Development of commodity promotion strategy

Master programme

COMMERCIAL AND INTERMEDIATE ACTIVITY

The programme trains specialists who are able to analyze and forecast market conditions, elaborate recommendations concerning the formation of production range programmes of price and sale policy improvement of enterprises of different forms of ownership.

Disciplines course chosen by students	**Semester**	**Credits**
Retailing technology	1	2,0
Merchandising	1	2,0
Direct sale technology	2	2,0
Electronic trading	2	2,0
Total		**8,0**

Proposed topics for master's papers:

1. Use of market condition forecast in enterprise business activity
2. Use of market segmentation in enterprise business activity
3. Enterprise commercial activity efficiency on the marketing base
4. Commodity lifecycle as the base of its promotion strategy formation

Master programme

INTERNATIONAL TRADE

The programme trains specialists to analyze market condition under world economic globalization, elaboration and estimation of international commercial transactions economic efficiency.

Disciplines course chosen by students	**Semester**	**Credits**
The newest marketing	1	2,0
Logistics in foreign economic activity	1	2,0
International commercial transactions	1	2,0
International trade and world market condition	2	2,0
Total		**8,0**

Proposed topics for master's papers:

1. Enterprise communicative policy in foreign market
2. Organization of efficient advertising campaign in foreign market
3. Sales management based on the principles of international marketing
4. Leasing organization on marketing principles

RESEARCH-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
Forecast methods in market researches	1	2,0
Business protocol and negotiation	1	2,0
Marketing policy of distribution	2	3,0
Quantative methods of decision making	2	2,0
Consumer behavior	2	3,0
Agrarian policy	2	2,0
Commercial activity of intermediate enterprises	2	3,0
Total		**16,0**

Master programme

SCIENTIFIC AND METHODICAL PRINCIPLES OF MARKETING AND INTERNATIONAL TRADE UNDER CONDITIONS OF WTO ENTRANCE

The programme trains specialists who are able to analyze and forecast market condition, elaborate recommendations concerning the formation and conduction of marketing communicative programmes, strengthening of market entities competitiveness, formation their positive image and reputation in the market.

Disciplines course chosen by students	Semester	Credits
Mathematical models in management and marketing	1	2,0
Marketing researches of foreign markets	2	2,0
International trade and world market condition	2	2,0
Methods and organization of scientific researches	2	2,0
Total		**8,0**

Proposed topics for master's papers:

1. Methodical principles of formation and realization of AIC enterprises marketing strategies
2. Mechanism of information support improvement of agricultural enterprises marketing
3. Organization and economic mechanism of AIC enterprises marketing
4. Diagnostics of enterprise and its products competitiveness

SPECIALITY
8.050102 “ECONOMIC CYBERNETICS”

Master programmes of industry-oriented specialization

Economic and mathematical modeling	TSC of information and broadcast support of agricultural and nature protection (educational building №10, room №304, tel.527-85-67) Coordinator – A. Skrypnyk, professor, doctor of economic sciences tel.: 527-85-67
Computer technologies in economic systems	TSC of information and broadcast support of agricultural and nature protection (educational building №10, room №502, tel.527-86-07) Coordinator – M. Shvydenko, professor, doctor of economic sciences tel.: 527-86-07

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land an d environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines course according to the requirements of MES		
Financial management	1	3,0
Current economic theories	1	3,0
Modeling of system characteristics in economy	1	3,0
Modeling of economic dynamics	1	3,0
Mathematical models of transformation economics	1	3,0
Corporate information systems	2	3,0
Information projects management	2	3,0
Total		**21,0**
Disciplines course chosen by the university	2	**17,0**
Disciplines course chosen by students	2	**6,0**
State Attestation		
Practice	2	4,0
Preparation and defense of master's paper	2	5,0
Total		**9,0**
Total		**60,0**

INDUSTRY-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
Business protocol and negotiation	1	2,0
Computer networks	1	2,0
Geoiformation systems	2	1,0
Agricultural policy	2	1,0
Principles of management consulting	2	2,0
Strategy management	2	2,0
Presentation methods and ”Web-design”	2	2,0
Human resources management	2	2,0
Methods of scientific researches	2	1,0
Electronic trade	2	2,0
Total		**17,0**

Master programme

ECONOMIC AND MATHEMATICAL MODELING

The programme trains specialists for modeling of state and dynamics of commodity markets function and amount of offered commodities and services and information support of system analysis.

Disciplines course chosen by students	Semester	Credits
System analysis	2	2,0
Mathematical models in management and marketing	2	2,0
Modeling of investment activity	2	2,0
Total		**6,0**

Proposed topics for master’s papers:

1. Analysis and forecast of agricultural product market
2. Modeling and optimization of production processes in plant growing
3. Optimization of agricultural enterprises production potential use
4. Modeling of system interaction of ecological and economic factors of agricultural production

Master programme

COMPUTER TECHNOLOGIES IN ECONOMIC SYSTEMS

The programme trains specialists for organization of record management and software of management systems taking into account information safety factors in computers and information protection in commercial systems.

Disciplines course chosen by students	**Semester**	**Credits**
Computer technologies in economic systems	2	2,0
World information resources	2	2,0
Current tool-making platforms	2	2,0
Total		**6,0**

Proposed topics for master's papers:

1. Elaboration of information Web-systems: design, environment, standards
2. Use of database management systems for analysis and prospects of agricultural product development
3. Database design and management for prospects forecast of agricultural product development
4. Internet technologies use in agricultural marketing

SPECIALITY
8.000007“ADMINISTRATIVE MANAGEMENT”

ITSC of agricultural management, marketing and AIC quality product management	
Administrative management and marketing in anticrisis management system ***Management of mechanisms of effective development of entrepreneurship agricultural entities*** ***Management of entrepreneurship agricultural entities development*** ***Innovative management in AIC***	ITSC of agricultural management, marketing and AIC quality product management (educational building №10, room №525, tel. 527-81-33) Coordinator – O. Kostiuk, candidate of economic sciences, associate professor tel.: 527-81-33
Management in pork production and processing ***Management in sheep production and processing***	ITSC of pig raising and sheep breeding (educational building №7 a, room №201, tel. 527-85-32) Coordinator – Yu. Zasuha, doctor of agricultural sciences, professor
Management of gardening and vegetable growing on fields and greenhouses products market	TSC of fruit growing (educational building №1, room №4, Tel. 527-86-26) Coordinator – V. Silenco, candidate of agricultural sciences, associate professor tel.: 527-86-26
Power industry management	ITSC of enterprises electrification and automation (educational building №8, room №27 a, tel. 527-87-73) Coordinator – L. Chervins’kyi, doctor of technical sciences, professor tel.: 527-83-77

Engineering management	ITSC of agricultural machinery and its standardization and certification and technical service (educational building №11, room №314, tel. 527-82-15) Coordinator – A. Filipov tel.: 527-82-15
Management of forestry organizations (enterprises)	TSC of forestry management, standardization and forest certification (educational building №1, room №99, tel. 527-88-00) Coordinator – P. Kravets' tel.: 527-88-00
Management in dairy industry ***Management in beef production and processing***	ITSC of dairy and meat cattle (educational building №7, room №46, tel. 527-83-93) Coordinator – A. Ugnivenko, doctor of agricultural sciences, professor tel.: 527-83-93

Management in poultry industry	ITSC of technologies in poultry breeding (educational building №7a, room №215, tel. 527-88-49) Coordinator – V. Borodai, doctor of agricultural sciences, professor tel.: 527-87-60
Management in bee-keeping production and processing	TSC of animal genetics and selection (educational building №1, room №81, tel. 527-82-30) Coordinator – V. Brovars'kyi, doctor of agricultural sciences, professor tel.: 527-80-31
Management of livestock breeding genetic resources	TSC of animal genetics and selection (educational building №1, room №80, tel. 527-82-30) Coordinator – M. Sahats'kyi, doctor of biological sciences, professor tel.: 527-82-30
Management in aqua culture production (according to the types)	TSC of water bioresources (educational building №1, room №32, tel. 527-86-83) Coordinator – N. Vovk, doctor of biological sciences, associate professor tel.: 527-86-83
Organization of management in veterinary medicine	TSC of veterinary management of reproductive animals (educational building №12, room №114, tel. 527-89-24) Coordinator – V. Lakatosh, candidate of veterinary sciences, associate professor tel.: 527-89-24
Management of quality of agricultural purpose lands	ITSC of soil science (educational building №2, room №19, tel. 527-87-66) Coordinator – V. Zabaluev tel.: 527-87-66

Management in plant growing	ITSC of agrotechnologies and their standardization and certification (educational building №7, room №6, tel. 527-86-26) Coordinator – V. Mokrienko, candidate of agricultural sciences, assistant tel.: 527-86-26
Management of plant protection means	TSC of phytomedicine and phytosanitation (educational building №4, room №42, tel. 527-85-77) Coordinator – M. Plyska tel.: 527-85-77
Marketing management in agronomy service	ITSC of agrotechnology and their standardization and certification (educational building №7, room №6, tel. 527-86-26) Coordinator – V. Mokrienko, candidate of agricultural sciences, assistant tel.: 527-86-26
Ecological management in AIC	TSC of ecological standardization and certification (educational building №17, room №214, tel. 527-81-72) Coordinator – V. Chaika, doctor of agricultural sciences, professor tel.: 527-87-90
Management in agricultural machinery construction	ITSC of agricultural machinery construction and reliability (educational building №11, room №218, tel. 527-81-85) Coordinator – S. Pylypaka, doctor of technical sciences, professor tel.: 527-81-85
Management of park-gardening organizations (enterprises)	TSC of landscape architecture and (educational building №1, room №22, tel. 527-82-37) Coordinator – A. Kushnir, candidate of biological sciences, associate professor tel.: 527-82-37

Management of land resources	TSC of land tenure, cadastre and land value estimation (educational building № 6, room №203, tel. 258-05-24) Coordinator – O. Dorosh, assistant tel.: 258-05-24

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Philosophy of science and innovation development	1	1,5
Agricultural, land an d environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Strategy of stable nature development and society	1	1,0
Business foreign language	1	1,0
Compulsory disciplines course according to the requirements of MES		
Business protocol and negotiation	1	2,0
Enterprises analysis and control	1	3,0
Business management	1	3,0
Production economy	1	3,0
Economy of information science	1	3,0
Foreign language	2	1,5
Business game (business management)	2	2,0
Entrepreneurship organization and planning	2	3,0
Human resources management	2	2,0
Methods and organization of scientific researches	2	2,0
Project management	2	2,0
Agricultural policy	2	2,0
Agricultural marketing	2	2,0
Quantative methods of decision making	3	2,0
Strategy management	3	3,0
Total		**42,0**
Disciplines course chosen by the university	1,2,3	**18**
Disciplines course chosen by students	2,3	**20,0**
State Attestation		
Practice	1,2	**5,0**
Preparation and defense of master's paper	3	**5,0**
Total		**10,0**
Total		**90,0**

INDUSTRY-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	2,3	**18,0**
Geoinformation systems	1	2,0
Accounting atomized system	1	2,0
Microeconomics	1	2,0
Macroeconomics	1	2,0
Agricultural consulting	2	2,0
International agribusiness	2	2,0
Methods of presentation and ”Web-design”	2	2,0
Introduction into scientific research	3	2,0
Finance	3	2,0
Total		**18,0**

Master programme

ADMINISTRATIVE MANAGEMENT AND MARKETING IN ANTICRISIS MANAGEMENT SYSTEM

The programme trains managers of higher level and system analysts who are able to make strategic decisions under risk, entrepreneurship stable development and improvement in competitive environment.

Disciplines course chosen by students	**Semester**	**Credits**
Modeling of economic processes	2	2,0
Organization and regulation of foreign economic activity	2	2,0
Anticrisis management	3	3,0
International management	3	3,0
Electronic trading	3	2,0
Advertising management	3	2,0
Innovative management	3	3,0
Management of foreign economic activity	3	3,0
Total		**20,0**

Proposed topics for master’s papers:

1. Optimization of resources management in AIC under risk
2. Motivate model in management: extension experience at enterprises of Ukraine and ways of improvement
3. Management of enterprise economic risks
4. Insurance as an instrument in risk management in agribusiness

Master programme

MANAGEMENT OF INSTRUMENTS OF AGRICULTURAL ENTREPRENEURSHIP ENTITIES EFFECTIVE DEVELOPMENT

The programme trains specialists to manage the process of effective production at agricultural entrepreneurship entities providing intensive production technologies, expenses reduction and increase of production economic effectiveness.

Disciplines course chosen by students	**Semester**	**Credits**
Risk management	2	2,0
Principles of management consulting	2	2,0
Quality management	3	3,0
Corporate management	3	3,0
Management of enterprise potential	3	3,0
Business information support	3	2,0
Decision making support systems	3	2,0
Management psychology	3	3,0
Total		**20,0**

Proposed topics for master's papers:

1. Enterprise activity (branch) forecast and planning
2. Management of agricultural effective production process at agricultural entrepreneurship entities
3. Improvement of product cost management process
4. Improvement of entrepreneurship management

Master programme

MANAGEMENT OF AGRICULTURAL ENTREPRENEURSHIP ENTITIES DEVELOPMENT

The programme train specialists who are able to form an effective entrepreneurship management system, and to solve productive and scientific problems concerning the effective development of agricultural enterprises and innovative activity.

Disciplines course chosen by students	**Semester**	**Credits**
Management of organization development	2	2,0
Management of enterprise activity on the market	2	2,0
Anticrisis management	3	3,0
Risk management in entrepreneurship	3	3,0
Enterprises financial accounts analysis	3	3,0
Information technologies	3	2,0
Organization business environment	3	2,0
Innovative management	3	3,0
Total		**20,0**

Proposed topics for master's papers:

1. Organization (enterprise, institution) development strategies
2. Entrepreneurship effective management system formation
3. Enterprise bank financial resources management
4. Planning functions development in enterprise activity management

Master programme

INNOVATIVE MANAGEMENT IN AIC

The programme trains managers of a higher chain of a new generation, who are competitive on labour market, are able to work creatively using innovative economy methods under the condition of the global competitiveness.

Disciplines course chosen by students	**Semester**	**Credits**
Modeling of economic processes	2	2,0
Innovative management	2	2,0
Anticrisis management	3	3,0
Creative management	3	3,0
Innovations marketing	3	3,0
Management of strategic changes	3	2,0
Advertising management	3	2,0
Business planning of innovative projects	3	3,0
Total		**20,0**

Proposed topics for master's papers:

1. An organization (enterprise, institution) innovative development strategy
2. Formation of innovative system of entrepreneurship activity management
3. Introduction of effective organizational and economical mechanism of enterprise innovative activity management
4. Business –incubator as a method of entrepreneurship innovative development

Master programme

MANAGEMENT IN PORK PRODUCTION AND PROCESSING

The programme trains specialists for system management of pork production and processing enterprises on the base of the branch ecologization, problems products quality and safety solution.

Disciplines course chosen by students	**Semester**	**Credits**
Biology of agricultural animals productivity	2	2,0
Animal productivity stimulators	2	1,0
Technology of meat and meat products	3	3,0
Specialized meat cattle	3	3,0
Technology of forage and forage additions	3	2,0
Pig breeding and reproduction	3	2,0
Management and marketing in pig raising	3	2,0
Individual pork production technologies	3	3,0
Pigs slaughter and pork processing	3	2,0
Total:		**20,0**

Proposed topics for master's papers:

1. Management of pork production and processing enterprises
2. Management of meat and meat products market
3. Substantiation of management decision making in pig raising intensive technology application
4. Management of efficient function increase of pork market regional development

Master programme

MANAGEMENT IN SHEEP PRODUCTION AND PROCESSING

The programme trains specialists for management of specialized enterprises in sheep breeding, their evaluation and attestation with the purpose of production efficiency increase, its quality and safety level and also branch potential growth.

Disciplines course chosen by students	**Semester**	**Credits**
Biology of agricultural animals productivity	2	2,0
Animal productivity stimulators	2	2,0
Technology of meat and meat products	3	3,0
Specialized meat cattle	3	3,0
Technology of forage and forage additions	3	2,0
Sheep breeding and reproduction	3	2,0
Management and marketing in sheep breeding	3	3,0
Individual sheep production technologies	3	3,0
Total:		**20,0**

Proposed topics for master's papers:

5. Management of mutton production and processing enterprises
6. Management of meat and meat products market
3. Substantiation of management decision making in sheep breeding intensive technology application

Master programme

MANAGEMENT OF GARDENING AND VEGETABLE GROWING ON FIELDS AND GREENHOUSES PRODUCTS MARKET

The programme trains specialists in management and marketing in horticulture using current scientifically grounded technologies of high quality planting material, product yield of fruit and vegetable cultures in the open air soils and green houses.

Disciplines course chosen by students	**Semester**	**Credits**
Biochemistry of fruit, vegetables and grapes	2	2,0
Intensive growing of planting materials	2	2,0
Agribusiness and marketing in horticulture and vegetable growing	3	3,0
Computer technologies in horticulture and vegetable growing	3	2,0
World agrotechnologies in horticulture and vegetable growing	3	2,0
Variety technologies in horticulture and vegetable growing	3	3,0
Organic vegetable growing	3	2,0
Marketing of planting material growing	3	2,0
Energy saving technologies in vegetable growing	3	2,0
Total:		**20,0**

Proposed topics for master's papers:

1. Management of horticulture products market (according to the types: -fruit; -berries)
2. Strategic management of greenhouses
3. Management of fruit and berries planting material market
4. Management of fruit and vegetable products processing and storage enterprises

Master programme

POWER INDUSTRY MANAGEMENT

The programme trains specialists for management of power industry service in enterprises system, technical diagnostics of power equipment, organization of agricultural power entities projecting.

Disciplines course chosen by students	**Semester**	**Credits**
Power engineering	2	3,0
Computer integrated management systems in power supply systems	2	3,0
Organization of enterprises power service	3	2,0
Management of entrepreneurship in power industry	3	3,0
Modeling and optimization of power supply systems	3	2,0
Automized records of power and material resources	3	3,0
State regulation in power industry	3	2,0
Software support of automized control systems	3	2,0
Total:		**20,0**

Proposed topics for master's papers:

1. Management of power service in poultry enterprises system
2. Management of power service in the system of enterprises specialized on growing products in greenhouses

The development and use of effective management system of enterprise power resources

Master programme

ENGINEERING MANAGEMENT

The programme trains specialists for management of production mechanization system in agricultural sphere, modeling and forecasting of working processes in agribusiness, projecting of technological processes of diagnostics and repair of machinery and equipment.

Disciplines course chosen by students	**Semester**	**Credits**
Engineering management	2	3,0
Projecting of technological processes of processing enterprises	2	3,0
Reliability of technological systems	3	2,0
Analysis of technological systems	3	2,0
Projecting of technological processes in livestock breeding	3	2,0
Projecting of technological processes in plant growing	3	2,0
Technical service and information support	2	3,0
Standardization and certification of machinery and equipment	3	3,0
Total:		**20,0**

Proposed topics for master's papers:

1. Operational management of machine and tractor base at agricultural enterprises
2. Information support of mechanization of winter wheat growing technologies
3. Management aspects of organization and economic mechanism of agricultural machinery import in Ukraine

Master programme

MANAGEMENT OF FORESTRY ORGANIZATIONS (ENTERPRISES)

The programme trains specialists for management of state forestry enterprises using space analysis of forest objects, GIS cartography of forestry enterprises and long-term monitoring of forest ecosystems.

Disciplines course chosen by students	**Semester**	**Credits**
Management of forest resources	2	3,0
GIS technologies in forestry	2	3,0
Forestry policy	3	3,0
Computer technology in forestry	3	2,0
Accounting in forestry	3	2,0
Foreign economic management in forestry subcomplex	3	2,0
Forest monitoring	3	3,0
Forestry production planning	3	2,0
Total:		**20,0**

Proposed topics for master's papers:

1. Strategy management of renewal processes in forestry
2. Management of state forestry enterprises
3. Management of forestry production processes
4. Management of sustainable forestry development

Master programme

MANAGEMENT IN DAIRY CATTLE

The programme trains managers the formation of milk production effective mechanism in different organizational and legal economies by increasing the potential, substantiation of milk price structure, depending on its quality and investments in branch infrastructure.

Disciplines course chosen by students	**Semester**	**Credits**
Production economy and dairy products marketing	2	2,0
Management of dairy production enterprises	2	2,0
Management and marketing in dairy cattle	3	3,0
Equipment at dairy enterprises	3	3,0
Feeding of highly productive cows	3	2,0
Management of cows dairy productivity	3	2,0
Intensive technologies of cattle young animals breeding	3	2,0
Total:		**20,0**

Proposed topics for master's papers:

1. Management of milk production and processing enterprises.
2. Management of marketing planning at an agricultural enterprise (using the enterprise materials)
3. Quality management on dairy products market
4. Strategy of foreign enterprises entering the market of milk and dairy products of Ukraine

Master programme

MANAGEMENT IN BEEF PRODUCTION AND PROCESSING

The programme trains the specialists who are able to provide the meat production efficiency in different organizational and legal economies and adaptation of processing enterprises to the market demands, analyzing the current state of meat industry and evaluating its prospective development.

Disciplines course chosen by students	**Semester**	**Credits**
Biology of agricultural animals productivity	2	2,0
Specialized meat cattle	2	2,0
Meat and meat products technology	3	3,0
Systems of cattle keeping and feeding	3	3,0
Management of cattle meat productivity	3	3,0
Animals productivity stimulators	3	2,0
Cattle slaughter and processing	3	3,0
Ecologically safety beef production	3	2,0
Total:		**20,0**

Proposed topics for master's papers:

1. Management of beef production and processing enterprises
2. Management of beef quality and its processing products
3. Management of efficiency increase of livestock products
4. Management in livestock breeding and ways of its improvement

Master programme

MANAGEMENT IN POULTRY INDUSTRY

The programme trains specialists for management of technological processes in the branch taking into consideration the peculiarities of pedigree work with proper kinds of poultry and use of mathematical models of optimization tasks for enterprises and their solution at poultry farms.

Disciplines course chosen by students	**Semester**	**Credits**
Broiler meat production	2	2,0
Turkey meat production	2	1,0
Waterfowl meat production	3	3,0
Management of technological processes in poultry industry	3	2,0
Business planning in poultry industry management system	3	2,0
Egg formation, bird embryonic development	3	2,0
Technology of different poultry kinds egg incubation	3	3,0
Egg production current industrial technologies	3	2,0
Total:		**20,0**

Proposed topics for master's papers:

1. Management of poultry products market (according to the kinds: broilers meat, food eggs, turkey meat, etc.)
2. Management of poultry production enterprises
3. Management of forage and forage additions

Master programme

MANAGEMENT IN BEE- KEEPING PRODUCTION AND PROCESSING

The programme trains specialists for practical management of bee-keeping production enterprises and management of innovative and ecological processes, forecast of demand and supply on bee-keeping products market.

Disciplines course chosen by students	**Semester**	**Credits**
Biology of agricultural animals productivity	2	2,0
Biology of a honey	2	3,0
Bees keeping and reproduction	3	3,0
Honey resources and plant pollination	3	3,0
Bee-keeping production, storage and processing	3	2,0
Equipment in bee-keeping	3	2,0
Bee pathology	2	2,0
Management and marketing in bee-keeping	3	3,0
Total:		**20,0**

Proposed topics for master's papers:

1. Management of bee-keeping production and processing enterprises
2. Enterprise organization and management under conditions of bee-keeping complex production
3. Management of bee-keeping effective production

Master programme

MANAGEMENT OF LIVESTOCK GENETIC RESOURCES

The programme trains specialists for management of livestock genetic resources and animal selection, the use of their productivity stimulators and management of investment projects in pedigree livestock.

Disciplines course chosen by students	**Semester**	**Credits**
Specialized meat cattle	2	2,0
Livestock pedigree	2	1,0
Population and special genetics	3	3,0
Pig breeding and reproduction	3	3,0
Sheep breeding and reproduction	3	2,0
Fur animals and rabbits breeding and reproduction	3	2,0
Current methods of genetic researches	3	2,0
Information systems in animal selection	3	3,0
Total:		**20,0**

Proposed topics for master's papers:

1. Management of livestock genetic resources (according to the types :cattle, pigs, poultry, sheep, horses)
2. Management of investments projects in pedigree livestock
3. Management of race track activity (pedigree reproductors/horse plants)

Master programme

MANAGEMENT IN AQUACULTURE PRODUCTION (ACCORDING TO THE TYPES)

The programme trains specialists for business and management organization in fishing, modeling of technological processes in the branch, taking into account the legal aspects and mechanisms of regulation of water alive resources removal, transport and fish processing boats, terminals exploitation.

Disciplines course chosen by students	**Semester**	**Credits**
Management of bioproducts processes	2	3,0
World fishing industry	2	2,0
Modeling of technological processes in fishing	3	3,0
Intensive technologies in aquaculture	3	3,0
Management of fish breeding enterprises	3	3,0
Marketing in fishing	2	3,0
Decorative aquaculture	3	3,0
Total:		**20,0**

Proposed topics for master's papers:

1. Management of decorative aquaculture products market
2. Optimization of effective use of water alive resources
3. Management of rational structure and balanced activity of fishing patrol bodies
4. Management of reproduction processes of water alive resources in fishing

Master programme

MANAGEMENT ORGANIZATION IN VETERINARY MEDICINE

The programme trains specialists for management of livestock products safety and quality, management and marketing in veterinary medicine, organization of veterinary service and private veterinary practice, risks analysis in food production.

Disciplines course chosen by students	**Semester**	**Credits**
Management and marketing in veterinary medicine	2	30
Pathology anatomy and forensic veterinary medicine	2	2,0
Law in veterinary medicine (WOT, EU)	3	3,0
veterinary service and private veterinary practice organization	3	3,0
State and veterinary and sanitary inspection and control	3	3,0
Standardization and certification of livestock products	3	3,0
Management of veterinary medicines quality, production and use	3	3,0
Total:		**20,0**

Proposed topics for master's papers:

1. Management of veterinary medicine service in Ukraine and EU
2. Management of livestock products safety and quality
3. Management of veterinary medicines market
4. Management of animal protection means

Master programme

MANAGEMENT OF AGRICULTURAL PURPOSE LANDS QUALITY

The programme trains specialists for management of land resources using the technologies of rational land use, soils fertility conservation and their protection from deflation, pasture and irrigation erosion, soils salinity and salinization, pollution of organic residues, radionuclides, heavy metals.

Disciplines course chosen by students	**Semester**	**Credits**
System of product standardization and quality indicators	2	2,0
Soils standardization systems	2	3,0
Content and criteria of land quality estimation	3	3,0
Monitoring of soils quality	3	3,0
Planning and organization of Rational land use technologies	3	3,0
Legislative and normative support of rational land resources use in Ukraine	3	3,0
Fertility conservation of erosed, degraded and re-cultivated soils	3	3,0
Total:		**20,0**

Proposed topics for master's papers:

1. Qualitative and expert estimation of agricultural purpose lands under land market formation
2. Improvement of control organization of land use and protection
3. Management of rational land use on ecologically stable agrolandscapes of different soil and climatic zones in Ukraine

Master programme

MANAGEMENT IN PLANT GROWING

The programme trains specialists for crop yields forecast and programming, management, technologies standardization and certification in plant growing, creation of systems of agricultural crops productivity management and technological processes projecting.

Disciplines course chosen by students	**Semester**	**Credits**
Innovative technologies in seed growing	2	3,0
Management of crop productivity formation	2	3,0
Management of plant growing production quality	3	3,0
Indices of biological, biochemical, technological production quality	3	2,0
Quality production certification and control	3	3,0
Management of plant growing enterprises	3	3,0
Management of plant growing production market	3	3,0
Total:		**20,0**

Proposed topics for master's papers:

1. Management of plant growing products market: grains; industrial crops; herbs; oil crops; energetic crops)
2. Management of grains yield storage
3. Peculiarities of world grain products market formation and the ways of grain products export efficiency increase in Ukraine

Master programme

MANAGEMENT ON PLANT PROTECTION MEANS MARKET

The programme trains specialists for management and marketing of plant protection means using technical and economic substantiation of their use, the research of agrochemical provision and service methods and means taking into account phytosanitary law and international cooperation in plant quarantine.

Disciplines course chosen by students	**Semester**	**Credits**
Management and marketing in plant protection	2	3,0
Phytosanitary law and international cooperation in plant quarantine	2	3,0
Technical and economic substantiation of plant protection means use	3	3,0
Methods of plant protection means testing	3	2,0
Pesticide toxicology	3	3,0
Plants pathogens ecology	3	3,0
Standardization and certification of plant growing products and technologies	3	3,0
Total:		**20,0**

Proposed topics for master's papers:

1. Management of plant protection means market under market relation development
2. Management of plant protection means realization enterprises
3. Competitiveness and management on plant protection means market in Ukraine

Master programme

MARKETING MANAGEMENT IN AGROCHEMISTRY SERVICE

The programme trains specialists for agrichemistry service management; chemization means market analysis, forecast of agrichemistry provision and service under the market conditions and determination of agrichemistry service quality.

Disciplines course chosen by students	**Semester**	**Credits**
Current technologies of agrochemistry provision	2	2,0
Economic and organizational provision of agrichemistry service	2	2,0
Neutralization and utilization of agrosphere waste	3	2,0
Management of plant growing products quality	3	2,0
Methods of agrochemistry monitoring and technological processes estimation in plant growing	3	3,0
Marketing in agrichemistry service	3	2,0
Integrated management of nutritive materials and soils passportization	3	2,0
Total:		**20,0**

Proposed topics for master's papers:

1. Management of chemization means market of Ukraine as a member of WOT
2. Management of the formation of plant growing products quality indices depending on the soil quality
3. Management of agrichemistry service enterprises

Master programme

ECOLOGICAL MANAGEMENT IN AIC

The programme trains specialists for ecological management in agrosphere, ecological standardization and certification, quality management through the mechanism of “nature-society” system and theoretical and methodological principles of system ecological management.

Disciplines course chosen by students	**Semester**	**Credits**
Ecological management in agro sphere	2	2,0
Ecological standardization and certification	2	2,0
Ecological entrepreneurship	3	3,0
Economy of the environment	3	2,0
Ecological marketing	3	3,0
Ecological audit	3	3,0
Ecological expertise in AIC	3	3,0
Innovative activity organization in environmental protection	3	2,0
Total:		**20,0**

Proposed topics for master’s papers:

1. Administrative systems of regional ecological management
2. Ecological management and influence evaluation on the environment
3. Production management of ecologically safe products in Ukraine

Master programme

MANAGEMENT IN AGRICULTURAL MACHINERY CONSTRUCTION

The programme trains specialists for management in machinery construction, cost management of machinery construction products, testing and certification of agricultural machinery, organization of technical service enterprises activity.

Disciplines course chosen by students	**Semester**	**Credits**
Organization of machinery construction management in AIC	2	2,0
Current methods of agricultural machinery projecting	2	2,0
Engineering management	3	3,0
Agricultural machinery construction methods	3	3,0
Optimization of technical systems structures	3	3,0
Management of machinery reliability in AIC	3	3,0
Testing and certification of agricultural machinery	3	3,0
Total:		**20,0**

Proposed topics for master's papers:

1. Management of agricultural machinery reliability
2. Management of agricultural machinery construction enterprises
3. Management of mechanization processes system in agricultural production
1. Administrative management of machinery and equipment standards introduction

Master programme

MANAGEMENT OF PARK-GARDENING ORGANIZATIONS (ENTERPRISES)

The programme trains specialists for management of park-gardening objects**,** systematization and classification of tree plants forms variety, work organization of park-gardening objects using on the base of environment economy.

Disciplines course chosen by students	**Semester**	**Credits**
Decorative horticulture	2	2,0
Dendro projecting	2	2,0
Reconstruction and restoration of park-gardening objects	3	3,0
Landscape design	3	3,0
Phytodesign of premises	3	3,0
Park-gardening objects use	3	3,0
Landscape projects	3	3,0
Park science	3	3,0
Total:		**20,0**

Proposed topics for master's papers:

1. Management of decorative horticulture
2. Management of landscape design
3. Management of territory decoration project

Master programme

LAND RESOURCES MANAGEMENT

The programme trains specialists for management of land resources, land use and land tenure based on legislation and taking into account state mechanisms and technologies of land resources management.

Disciplines course chosen by students	**Semester**	**Credits**
Land and real estate market	2	30
Land use and land tenure economy	2	2,0
Legislative support of real estate cadastre	3	3,0
Management of land resources	3	3,0
Optimization of land use	3	3,0
Legislative and normative support of land resources rational use in Ukraine	3	3,0
Fertility conservation of eroded, degraded and re-cultivated soils	3	3,0
Total:		**20,0**

Proposed topics for master's papers:

1. Land resources management on the basic level by determining their market value
2. Land plots certification as an instrument of rational land use management
3. Improvement of management system of land resources
4. Organizational and legal aspects of land resources management

SPECIALITY
8.050107 “ECONOMY OF AN ENTERPRISE”

Master programmes of industry-oriented specialization

Business planning of entrepreneurial activity in AIC	TSC of economics, accounting and finance (educational building №10, room № 516, tel. 527-87-59) Coordinator – M. Il’chuk, professor, doctor of economic sciences tel.:527-87-59
Production service in AIC	TSC of economics, accounting and finance (educational building №10, room № 516, tel. 527-87-59) Coordinator – M. Il’chuk, professor, doctor of economic sciences tel.:527-87-59
Social and economic development of rural territories	TSC of economics, accounting and finance (educational building №10, room№ 516, tel. 527-87-59) Coordinator – V. Tereshchenko, professor, doctor of economic sciences tel.:527-82-69
Analysis and substantiation of agricultural entities strategic development	TSC of economics, accounting and finance (educational building №10, room 516, tel. 527-87-59) Coordinator – V. Savchuk, professor, doctor of economic sciences tel.: 527-82-36
Economy of agrarian sector	TSC of economics, accounting and finance (educational building №10, room№ 516, tel. 527-87-59) Coordinator– V. Zbars’kyi, professor, doctor of economic sciences tel.:527-85-75
Stock activity on agrarian market	TSC of economics, accounting and finance (educational building №10, room№ 516, tel. 527-87-59) Coordinator – M. Solodkyi, professor, doctor of economic sciences tel.:527-81-31

Master programmes of research-oriented specialization

Projecting of entrepreneurship activity in AIC	TSC of economics, accounting and finance (educational building №10, room № 516, tel. 527-87-59) Coordinator M. Il'chuk, professor, doctor of economic sciences tel.:527-87-59
Improvement of rural territories self-management system	TSC of economics, accounting and finance (educational building №10, roomN№ 516, tel. 527-87-59) Coordinator – V. Tereshchenko, professor, doctor of economic sciences tel.:527-82-69
Innovative economy development	TSC of economics, accounting and finance (educational building №10, room № 516, tel. 527-87-59) Coordinator– V. Zbars'kyi, professor, doctor of economic sciences tel.:527-85-75

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Strategy of stable nature development and society	1	1,0
Philosophy of science and innovation development	1	1,5
Business foreign language	1	1,5
World agriculture and food resources	1	1,0
Agricultural, land an d environmental law	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Total		**7,0**
Compulsory disciplines course according to the requirements of MES		
Financial management	1	3,0
Human resources management	2	3,0
International management	2	3,0
Management of enterprise potential	2	3,0
Economic diagnostics	2	3,0
Projects management	2	3,0
Enterprise strategic management	2	3,0
Total		**21,0**
Disciplines course chosen by the university	1,2	**17,0**
Disciplines course chosen by students	1,2	**7,0**
State Attestation		
Practice	2	2,0
Preparation and defense of master's paper	2	6,0
Total		**8,0**
Total		**60,0**

INDUSTRY-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	**Semester**	**Credits**
Financial analysis	2	2,0
Price and pricing	2	2,0
Current problems of agrarian economy	1	2,0
Economy of food subcomplex	1	3,0
Stock market	1	2,0
Agrarian policy	2	2,0
Management of regional development	2	2,0
Business planning of entrepreneurship activity in AIC	1	2,0
Total		**17,0**

Master programme

BUSINESS PLANNING OF ENTREPRENEURSHIP ACTIVITY IN AIC

The programme provides theoretical aspects of business planning, the essence and organization of business planning at an agricultural enterprise, structure and content of a business plan, elaboration technology of different kinds business plans; business plan presentation and expertise; business planning process computerization.

Disciplines course chosen by students	**Semester**	**Credits**
Projecting of entrepreneurial activity in AIC	1,2	5,0
Agribusiness: development and evaluation	2	2,0
Total		**7,0**

Proposed topics for master's papers:

1. Business planning of agricultural enterprise development.
2. Business plan of investment project.
3. Business planning of a pig farm development.

Master programme

PRODUCTION SERVICE IN AIC

Economic and organization of production service and material and technical support of agricultural enterprises, that provides study of scientific principles of agrarian service system organization; economic relations between production and service spheres of AIC; business planning, function system optimization and service enterprises development strategy based on the current methods (quality management methodology, business processes reengineering, information technologies and systems, etc.).

Disciplines course chosen by students	**Semester**	**Credits**
Economic relations between service and production spheres	1,2	5,0
Agribusiness: development and evaluation	2	2,0
Total		**7,0**

Proposed topics for master's papers:

1. Organization and economic effectiveness of agricultural enterprises material and technical support.
2. Improvement of agricultural enterprises production service forms.
3. Improvement of economic relations in the sphere of material and technical support of agricultural enterprises.

Master programme

SOCIAL AND ECONOMIC DEVELOPMENT OF RURAL TERRITORIES

The programme provides study and research of rural sector structure, demographic and settlement base, formation of rural territories labour potential. The programme includes such problems as rural environment, rural social sphere, needs, incomes and expenses of rural population, economies types development, farms and privately owned husbandries, cooperative formations, credit unions, rural green tourism, etc.

Disciplines course chosen by students	**Semester**	**Credits**
Social and economic development of rural territories	1,2	5,0
Organization of local government system	2	2,0
Total		**7,0**

Proposed topics for master's papers:

1. Village social sphere under the system of social and economic development of rural territories.
2. Economic policy of rural territories stable development.
3. Mechanism of balance of society interests, local government and economy entities on rural territories.

Master programme

ANALYSIS AND SUBSTANTIATION OF AGRICULTURAL ENTITIES STRATEGIC DEVELOPMENT

The programme provides investigation of methodology of agricultural entities strategic development formation and its role and importance for analysis and forecast; state diagnostics and evaluation of development tendencies of analyzed objects; development of methodical approaches and practical recommendations as to agricultural entities strategic development analytical support.

Disciplines course chosen by students	**Semester**	**Credits**
Strategic analysis in business	1,2	5,0
Mortgage crediting	2	2,0
Total		**7,0**

Proposed topics for master's papers:

1. Analytical substantiation of branch strategic development (plant growing, livestock breeding, forage production, vegetable growing, fruit growing, etc.).
2. Analytical substantiation of innovative (social and economical) entrepreneurship development (branch, region).
3. Analytical substantiation of an enterprise investment attractiveness (credit solvency) increase.

Master programme

ECONOMIC OF AGRARIAN SECTOR

The programme studies the system of agrarian production relations in connection with the types of ownership development in the country. It provides the criteria and indices, which characterize the agricultural production development, ways and methods of cumulative potential rational use. The necessity of the development of agrarian sector innovation and investment potential in Ukraine is substantiated; the methods of its economic effectiveness determination are explained in the programme. The branches intensive development problems are studied by wide application of scientific and technical progress achievements.

Disciplines course chosen by students	**Semester**	**Credits**
Economic of agrarian sector	1,2	5,0
Mortgage crediting	2	2,0
Total		**7,0**

Proposed topics for master's papers:

1. Formation and function of the milk and milk processing products market.
2. The state and perspective development of agricultural production on the innovation basis.
3. Rural tourism as the type of economy activity and its effectiveness

Master programme

STOCK ACTIVITY ON THE AGRARIAN MARKET

The programme trains highly qualified, professional personnel with new way of thinking, who fully understand the peculiarities of market economy, have special knowledge and skills how the stock infrastructure is organized and how it functions, which are necessary for preparation and making stock deals. It trains specialists who are able to be the leaders of the stock industry in our country and work effectively for the society.

Disciplines course chosen by the university	**Semester**	**Credits**
Stock electronic trade	1	2,0
Price and pricing	2	2,0
Current problems of agrarian economy	1	2,0
Stock broker activity	1,2	2,0
Stock market	1	2,0
Organization of stock commodity market	1	2,0
Stock law	1	2,0
Agrarian market infrastructure	1	1,0
Marketing of stock activity	2	2,0
Merchandise knowledge of stock commodities	2	2,0
Analysis and forecast of stock market	1	2,0
Business planning of entrepreneurial activity in AIC	1	2,0
Total		**19,0**
Disciplines course chosen by students		
Technologies of futures trade	1,2	5,0
Total		**5,0**

Proposed topics for master's papers:

1. Economic mechanism of demand and supply regulation on the stock market of agricultural food products.
2. Investment processes and their role in agricultural products prices regulation.
3. Agrarian foundation, its place and role in agricultural products market regulation.

RESEARCH-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	**Semester**	**Credits**
Financial analysis	2	2,0
Price and pricing	2	2,0
Current problems of agrarian economy	1	2,0
Economy of food subcomplex	1	3,0
Stock market	1	2,0
Agrarian policy	2	2,0
Management of regional development	2	2,0
Business planning of entrepreneurship activity in AIC	1	2,0
Total		**17,0**

Master programme

PROJECTING OF ENTREPRENEURSHIP ACTIVITY IN AIC

The programme studies projecting of entrepreneurship activity in AIC, which provides complex optimization of agrarian enterprises function system according to the environment demands and worked out strategy development, which promotes management principle improvement, production effectiveness increase on the base of current methods (quality management methodology, business processes reengineering, information technologies and systems, etc.).

Disciplines course chosen by students	**Semester**	**Credits**
Projecting of entrepreneurial activity in AIC	1,2	5,0
Restructuring of enterprises	2	2,0
Total		**7,0**

Proposed topics for master's papers:

1. Scientific aspects of entrepreneurial activity effective development in AIC.
2. Projecting of enterprise restructuring.
3. Projecting of enterprise financial recovery.

Master programme

IMPROVEMENT OF RURAL TERRITORIES LOCAL GOVERNMENT SYSTEM

It is possible to slow down the processes of villages (rural territories) degradation and recession by means of various measures among which the provision of qualified specialists for local government bodies takes an important place. The contemporary head of a village council must have proper professional qualification in problems of production and economy base of rural territories of local government, rural territories social sphere development, the peculiarities of organizational and economic and legal bases of small economy types function in the countryside. He or she must be able to make social partnership and the system of social and labour relations, form modern living environment of rural societies population.

Disciplines course chosen by students	**Semester**	**Credits**
Organization of local government system	1,2	5,0
Social protection of population	2	2,0
Total		**7,0**

Proposed topics for master's papers:

1. The ways of improvement of social and labour relations system and social partnership in rural societies.
2. Improvement of local government system by rural territories.
3. Improvement of social support system of rural societies.

Master programme

INNOVATIVE DEVELOPMENT OF THE ECONOMY

Scientific and methodical bases of innovations in agroindustrial production are studied. The state and ways of improvement of organizational and economic mechanism of innovative activity accomplishment is determined. Subsequent directions of Ukrainian agrarian sector innovation development are substantiated. Methodical approaches to agricultural enterprises innovation development strategy formation are explained. The criteria and indices of evaluation of innovative strategy economic effectiveness using the quasirent are studied. The mechanism of evaluation of innovation projects effectiveness and risks on territories priority development is covered. The directions of government support of innovation entrepreneurship development in agroindustrial production and the improvement of mechanism of information support organization of agroindustrial enterprises development are substantiated.

Disciplines course chosen by students	**Semester**	**Credits**
Innovation economy	1,2	5,0
Mortgage crediting	2	2,0
Total		**7,0**

Proposed topics for master's papers:

1. Intensification of agricultural production on the innovation base.
2. The influence of enterprise innovative policy on its activity effectiveness increase.
3. The role of private rural economies in social and economic countryside development.

SPECIALITY
8.050106“ACCOUNTING AND AUDIT”

Master programmes of industry-oriented specialization

Methods and organization of accounting, control and analysis in management of banks activity	TSC of economics, accounting and finance (educational building №10, room 516, tel. 527-87-59) Coordinator– V. Savchuk, professor, doctor of economic sciences tel.: 527-82-36
Methods and organization of accounting, control and analysis in management of agroindustrial enterprises production activity	TSC of economics, accounting and finance (educational building №10, room 516, tel. 527-87-59) Coordinator – L. Suk, professor, doctor of economic sciences tel.: 527-83-61
Economic control of agroindustrial production entrepreneurial activity entities	TSC of economics, accounting and finance (educational building №10, room 516, tel. 527-87-59) Coordinator– Ye. Kaliuga, professor, doctor of economic sciences tel.: 527-86-11
Methods and organization of accounting, control and analysis in management of budget organizations activity	TSC of economics, accounting and finance (educational building №10, room 516, tel. 527-87-59) Coordinator – L. Shatkovs’ka, professor, doctor of economic sciences tel.: 527-80-51

Master programme of research-oriented specialization

Accounting, control and analysis in management of agricultural enterprises activity	TSC of economics, accounting and finance (educational building №10, room 516, tel. 527-87-59) Coordinator – G. Kireitsev, professor, doctor of economic sciences tel: 527-83-61

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Strategy of stable nature development and society	1	1,0
Philosophy of science and innovation development	1	1,5
Business foreign language	1	1,5
World agriculture and food resources	1	1,0
Agricultural, land an d environmental law	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Total		**7,0**
Compulsory disciplines course according to the requirements of MES		
Human resources management	1	3,0
International management	2	3,0
Record organization	2	4,5
Financial management	1	3,0
Strategic analysis	1	3,0
Reporting of an enterprise	2	4,5
Total		**21,0**
Disciplines course chosen by the university	1,2	**20,0**
Disciplines course chosen by students	1,2	**4,0**
State Attestation		
Practice	2	2,0
Preparation and defense of master's paper	2	6,0
Total		**8,0**
Total		**60,0**

INDUSTRY-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	**Semester**	**Credits**
Judicial and accounting expertise	1	2,0
Reporting of foreign economic activity	2	2,0
Agrarian policy	2	2,0
Management of regional development	2	1,5
Financial analysis	1	2,0
Models and methods of decision making in analysis and audit	2	2,0
Tax management	2	1,5
Mortgage crediting	2	1,5
Total		**14,5**

Master programme

METHODS AND ORGANIZATION OF ACCOUNTING, CONTROL AND ANALYSIS IN MANAGEMENT OF BANKS ACTIVITY

The programme provides the investigation of accounting organization and methods peculiarities, banks activity control and analysis according to the objects: security transactions; bills operations; clearings; leasing operations; interbank payments; banks activity profits and expenses; banks reserve funds formation and use; banks deposit operations; foreign currency operations; banks investment activity; analysis of a bank-bankrupt financial state; crediting under market conditions**.**

Disciplines course chosen by the university	**Semester**	**Credits**
Bank operations	1	1,5
Current problems of banks accounting and control	1	2,0
Inner control in banks	2	2,0
Total		**5,5**
Disciplines course chosen by students		
Peculiarities of accounting organization in banks	1	2,0
Audit in banks	2	1,0
Bank activity analysis	2	1,0
Total		**4,0**

Proposed topics for master's papers:

1. Accounting and control of operations with securities.
2. Accounting and control of agricultural enterprises crediting and the ways of its improvement.
3. Banks book-keeping and its figures analysis.

Master programme

METHODS AND ORGANIZATION OF ACCOUNTING, CONTROL AND ANALYSIS IN MANAGEMENT OF AGROINDUSTRIAL ENTERPRISES PRODUCTION ACTIVITY

The programme provides researches of accounting development tendencies and rules in Ukraine under the conditions of its reformation according to the principles of internationals standards and requirements of European integration institutes; methods and organization of financial records according to the objects: fixed and working assets, own capital, long-term and current biological assets, long-term and current liabilities, settlements with tax system, expenses and incomes according to the types; financial accounting; managerial expenses records and cost production calculation in plant growing, livestock-breeding, subsidiary plants; control, audit and analysis according to the objects of assets, liabilities and processes according to the activity types using computer technologies.

Disciplines course chosen by the university	**Semester**	**Credits**
Stock market	1	1,5
Current problems of accounting and control at AIC enterprises	1	2,0
Inner control at agricultural enterprises	2	2,0
Total		**5,5**
Disciplines course chosen by students		
Accounting at industrial and agroservice enterprises	1	2,0
Accounting at agricultural small business enterprises	2	2,0
Total		**4,0**

Proposed topics for master's papers:

1. Accounting and control of plant growing production expenses.
2. Accounting and control of current biological assets.
3. Accounting of profit formation and its use analysis.

Master programme

ECONOMIC CONTROL OF AGROINDUSTRIAL PRODUCTION ENTREPRENEURSHIP ACTIVITY ENTITIES

The programme provides the research of economic control system and its reformation directions, economic control organization using computer technologies, methods of its implementation, organization and control methods of the objects: fixed assets, stock, funds and payments, own capital, long-term and current liabilities, expenses and incomes, financial results; organization and methods of inner economy control including inventory; to draw up audit and check-up results documents; audit and check-up materials realization and the way of material losses recovery.

Disciplines course chosen by the university	**Semester**	**Credits**
Stock market	1	1,5
Current problems of accounting and control at AIC enterprises	1	2,0
Inner control at agricultural enterprises	2	2,0
Total		**5,5**
Disciplines course chosen by students		
Organization and methods of judicial and accounting expertise	1	2,0
Economic control	2	2,0
Total		**4,0**

Proposed topics for master's papers:

1. Organization of property and land relations control system in the agrarian sector of the economy.
2. Inventory of economic instruments: methods and organization.
3. Inner economic control at agricultural enterprises: state and the ways of its improvement.

Master programme

METHODS AND ORGANIZATION OF ACCOUNTING, CONTROL AND ANALYSIS IN MANAGEMENT OF BUDGET ORGANIZATIONS ACTIVITY

The programme provides the research of budget organizations accounting policy; accounting and control of profits, expenses and monetary funds of common and special foundations of budget organizations; the peculiarities of accounting of budget organizations; the peculiarities of accounting and control of property, stock, funds and payments; the use of computer technologies in accounting and control of budget organizations.

Disciplines course chosen by the university	**Semester**	**Credits**
Bank operations	1	1,5
Current problems of accounting and control of budget institutions	1	2,0
Inner control at agricultural enterprises in budget institutions	2	2,0
Total		**5,5**
Disciplines course chosen by students		
Accounting in budget organizations and institutions	1	3,0
Estimate analysis in budget organizations and institutions	2	1,0
Total		**4,0**

Proposed topics for master's papers:

1. Accounting and analysis of common foundation profit.
2. Accounting and analysis of special foundation profit.
3. Record keeping and its figures analysis.

RESEARCH-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	**Semester**	**Credits**
Judicial and accounting expertise	1	2,0
Reporting of foreign economic activity	2	2,0
Agrarian policy	2	2,0
Management of regional development	2	1,5
Financial analysis	1	2,0
Models and methods in decision making in analysis and audit	2	2,0
Tax management	2	1,5
Mortgage crediting	2	1,5
Stock market	1	1,5
Accounting, analysis and control of transaction expenses	1	2,0
Inner control at agricultural enterprises	2	2,0
Total		**20,0**

Master programme

ACCOUNTING, CONTROL AND ANALYSIS IN MANAGEMENT OF AGRICULTURAL ENTERPRISES ACTIVITY

The programme provides the research of accounting methods, control and analysis aimed at accounting and analytical and information support of property management, expenses, profits, capital, capital and financial investments, biological assets, production processes, labour resources and also methods and organization of control and audit work, audit, inner control and judicial and accounting expertise of agricultural enterprises activity; adaptation of international standards in accounting and audit to national practice; computer technologies in accounting, audit and analysis.

Disciplines course chosen by students	**Semester**	**Credits**
Methods and organization of scientific researches	1	2,0
Accounting in enterprise management	2	2,0
Total		**4,0**

Proposed topics for master's papers:

1. Accounting system in Ukraine and its development tendencies forecast.
2. Integrated system of financial records and tax payments at agricultural enterprises.
3. Financial analysis of an agricultural enterprise activity and its information support.

SPECIALITY
8.050104 “FINANCE”

Master programmes of industry-oriented specialization

Bank service of agrarian enterprises	TSC of economics, accounting and finance (educational building №10, room 516, tel. 527-87-59) Coordinator– V. Martynenko professor, doctor of economic sciences tel.: 527-88-91
Corporate finance	TSC of economics, accounting and finance (educational building №10, room 516, tel. 527-87-59) Coordinator– V. Martynenko professor, doctor of economic sciences tel.: 527-88-91
Insurance	TSC of economics, accounting and finance (educational building №10, room 516, tel. 527-87-59) Coordinator– V. Martynenko professor, doctor of economic sciences tel.: 527-88-91
Stock activity on stock market	TSC of economics, accounting and finance (educational building №10, room 516, tel. 527-87-59) Coordinator– V. Martynenko professor, doctor of economic sciences tel.: 527-88-91

Master programmes of research-oriented specialization

Scientific and methodic principles of bank service of AIC enterprises and agrarian mortgage	TSC of economics, accounting and finance (educational building №10, room 516, tel. 527-87-59) Coordinator– V. Martynenko professor, doctor of economic sciences tel.: 527-88-91
Scientific and methodic principles of agrarian enterprises financial activity management	TSC of economics, accounting and finance (educational building №10, room 516, tel. 527-87-59) Coordinator – V. Martynenko professor, doctor of economic sciences tel.: 527-88-91
Theoretical and methodic principles of agrarian enterprises insurance support	TSC of economics, accounting and finance (educational building №10, room 516, tel. 527-87-59) Coordinator– V. Martynenko professor, doctor of economic sciences tel.: 527-88-91

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Strategy of stable nature development and society	1	1,0
Philosophy of science and innovation development	1	1,5
Business foreign language	1	1,5
World agriculture and food resources	1	1,0
Agricultural, land an d environmental law	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Total		**7,0**
Compulsory disciplines course according to the requirements of MES		
Financial management	1	3,0
Human resources management	2	3,0
International management	2	3,0
Strategic management	2	3,0
Financial services market	1	4,5
Management of enterprise financial sanation	2	4,5
Total		**21,0**
Disciplines course chosen by the university	1,2	**18,0**
Disciplines course chosen by students	1,2	**6,0**
State Attestation		
Practice	2	2,0
Preparation and defense of master's paper	2	6,0
Total		**8,0**
Total		**60,0**

INDUSTRY-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
Tax management	2	2,0
Mortgage crediting	1	2,0
Agrarian policy	1	2,0
Stock market	1	2,0
Total		**8,0**

Master programme

BANK SERVICE OF AGRARIAN ENTERPRISES

The programme trains specialists in banking service of agrarian sphere, gives theoretical and practical knowledge in organization of banks activity in agrarian enterprises service sphere. It also gives future specialists in finance and economy the knowledge of peculiarities of banks work with enterprises of agrarian sector of economy.

Disciplines course chosen by the university	Semester	Credits
International payments and currency operations	1	1,5
Budget management	1	2,0
Marketing in banking	2	1,5
Analysis of investment projects	2	2,0
National bank and monetary and credit policy	2	1,5
International finance	2	1,5
Total		**10,0**
Disciplines course chosen by students		
Bank service of agrarian enterprises	1	3,0
Analysis and management of bank activity	2	3,0
Total		**6,0**

Proposed topics for master's papers:

1. The peculiarities of crediting of agrarian enterprises by bank institutions.
2. The development of short-term bank crediting of agrarian enterprises.
3. Commercial banks operations on credit market.

Master programme

CORPORATE FINANCE

The programme trains specialists of financial sphere in agrarian sector of economy, forms skills of money flows management, financial records analysis, inner company forecast and planning. It provides methods of complex evaluation of enterprise financial state, financial risks management.

Disciplines course chosen by the university	**Semester**	**Credits**
Methodology of financial and economic researches of agrarian enterprises development	1	1,5
Budget management	1	2,0
International finance	2	1,5
Analysis of investment projects	2	2,0
National bank and monetary and credit policy	2	1,5
Local finance	2	1,5
Total		**10,0**
Disciplines course chosen by students		
Corporate management	1	3,0
Financial management of corporations	2	3,0
Total		**6,0**

Proposed topics for master's papers:

1. Budgeting as the main instrument of enterprise controlling.
2. Sanation audit in the system of enterprises financial activity anticrisis management.
3. Financial aspects of AIC enterprises re-organization.

Master programme

INSURANCE

The programme provides the determination of financial stability and insurance company reliability, analysis and estimation of insurance company financial state, calculation of sum of insurance tariff and its formation analysis in different insurance companies, enterprise risks management to provide on time neutralization of their negative influence on economy activity with the help of insurance, calculation of insurance sum, insurance bonus, the volume of loss and insurance compensation from the point of view of insurance objects.

Disciplines course chosen by the university	**Semester**	**Credits**
Current problems of agriculture financing and crediting	1	1,5
Budget management	1	2,0
International finance	2	1,5
Analysis of investment projects	2	2,0
National bank and monetary and credit policy	2	1,5
Social insurance	2	1,5
Total		**10,0**
Disciplines course chosen by students		
Finance support of insurance liabilities	1	2,0
Management in insurance organizations	2	2,0
Management of reinsurance operations	2	2,0
Total		**6,0**

Proposed topics for master's papers:

1. Insurance in the system of enterprise risks management.
2. Insurance protection of agricultural enterprises.
3. An insurance company as a specific finance institution.

Master programme

STOCK ACTIVITY ON STOCK MARKET

The programme traines specialists in finance for work on the stock market of Ukraine and its financial segments, who have the knowledge and skills in trade organization on stock exchange with commodities, securities, currency, etc. it trains specialists who are able to be leaders яof stock industry in our country and work effectively for the society development.

Disciplines course chosen by the university	**Semester**	**Credits**
Stock market regulation	1	1,0
Budget management	1	1,0
Organization of stock finance market	1	2,0
Stock electronic trade	2	1,5
Assets management	2	1,0
Deposits activity	2	1,0
Register of securities holders	2	1,0
Stock-brokerage activity	2	1,5
Total		**10,0**
Disciplines course chosen by students		
Analysis and forecast of stock market	1	3,0
Technology of futures trade	2	3,0
Total		**6,0**

Proposed topics for master's papers:

1. Adaptation of national stock financial market to the conditions of world trade.
2. Futures trade as the base of stock market function.
3. Methods of prices analysis and forecast on stock financial market.

RESEARCH-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	**Semester**	**Credits**
Tax management	2	2,0
Mortgage crediting	1	2,0
Agrarian policy	1	2,0
Stock market	1	2,0
Total		**8,0**

Master programme

SCIENTIFIC AND METHODIC PRINCIPLES OF BANK SERVICE OF AIC ENTERPRISES AND AGRARIAN MORTGAGE

The programme trains specialists of scientific direction, who do researches of banks activity as to service of agrarian enterprises.

Disciplines course chosen by the university	**Semester**	**Credits**
International payments and currency operations	1	1,5
Budget management	1	2,0
Marketing in a bank	2	1,5
Analysis of investment projects	2	2,0
National bank and monetary and credit policy	2	1,5
International finance	2	1,5
Total		**10,0**
Disciplines course chosen by students		
Scientific researches of problems of AIC enterprises bank service	1	3,0
Scientific basis of mortgage objects estimation	2	3,0
Total		**6,0**

Proposed topics for master's papers:

1. Improvement of borrowers' credit solvency estimation.
2. Mortgage crediting: the state and its development perspectives.
3. Analysis of banks activity effectiveness

Master programme

SCIENTIFIC AND METHODIC BASIS OF AGRARIAN ENTERPRISES FINANCIAL ACTIVITY MANAGEMENT

The programme trains specialists of financial sphere in agrarian sector of economy and scientific institutions of Ukraine, forms the views to scientific researches process in any sphere of human, financial and economic activity, it gives practical skills in proper use of special methodic approaches to obtain new knowledge.

Disciplines course chosen by the university	**Semester**	**Credits**
Current problems of agriculture financing and crediting	1	1,5
Budget management	1	2,0
International finance	2	1,5
Analysis of investment projects	2	2,0
National bank and monetary and credit policy	2	1,5
Local finance	2	1,5
Total		**10,0**
Disciplines course chosen by students		
Methodology of financial and economic researches of agrarian enterprises development	1	3,0
Scientific principles of corporate management	2	3,0
Total		**6,0**

Proposed topics for master's papers:

1. Financing of innovation projects of AIC.
2. Estimation and evaluation of economy entities investment possibilities.
3. Formation of portfolio of real investments of AIC enterprises and its optimization methods.

Master programme

THEORETICAL AND METHODICAL BASIS OF AGRARIAN ENTERPRISES INSURANCE SUPPORT

The programme provides theoretical and practical knowledge in entrepreneurship entities activity taxation, tax planning and forecasting, analytical research aimed at the definition proper factors of taxation system function, complex estimation of taxation system, finding the reserves of taxation efficiency increase, quantative and qualititative characteristics of the processes taken place in the financial sphere of the country and determination of tax system efficiency on the whole and in separate branches, regions and tax payers, tax regulation as a component of state tax management and obtaining practical skills in the development of the common structure profitable part of the state budget and making tax regulations with the purpose of achieving of optimal tax payments and tax system.

Disciplines course chosen by the university	**Semester**	**Credits**
Current problems of agriculture financing and crediting	1	1,5
Budget management	1	2,0
International finance	2	1,5
Analysis of investment projects	2	2,0
National bank and monetary and credit policy	2	1,5
Social insurance	2	1,5
Total		**10,0**

Disciplines course chosen by students	**Semester**	**Credits**
Scientific researches of problems of agrarian enterprises insurance support	1	2,0
Estimation of insurance risks in	2	2,0
Actuary payments	2	2,0
Total		**6,0**

Proposed topics for master's papers:

1. Scientific and methodical substantiation of land taxation principles in agricultural production.
2. Theoretical and methodical principles of improvement of agricultural production taxation.
3. Improvement of theoretical and methodical principles of tax planning and its optimization at agricultural enterprises.

SPECIALITY
8.050114 “TAXATION”

Master programmes of industry-oriented specialization

Taxation of agricultural entrepreneurship entities activity	TSC of economics, accounting and finance (educational building №10, room 516, tel. 527-87-59) Coordinator – P. Laiko, professor, doctor of economic sciences tel.: 527-87-59

Master programmes of research-oriented specialization

Theoretical and methodical principles of taxation and tax regulation	TSC of economics, accounting and finance (educational building №10, room 516, tel. 527-87-59) Coordinator – P. Laiko, professor, doctor of economic sciences tel.: 527-87-59

Disciplines included in Master programmes	Semester	Credits
Compulsory disciplines course for all Master students of National University of Life and Environmental Sciences of Ukraine		
Strategy of stable nature development and society	1	1,0
Philosophy of science and innovation development	1	1,5
Business foreign language	1	1,5
World agriculture and food resources	1	1,0
Agricultural, land an d environmental law	1	1,0
International standardization, certification of technologies, raw materials, finished products of AIC	1	1,0
Total		**7,0**
Compulsory disciplines course according to the requirements of MES		
Tax control	1	4,0
Tax management	2	4,0
Organization of state officials performance	2	4,0
Customs activity	1	3,0
Budget management	2	3,0
Tax bookkeeping	2	3,0
Total		**21,0**
Disciplines course chosen by the university	1,2	**17,0**
Disciplines course chosen by students	1,2	**7,0**
State Attestation		
Practice	2	2,0
Preparation and defense of master's paper	2	6,0
Total		**8,0**
Total		**60,0**

INDUSTRY-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	**Semester**	**Credits**
Financial management	1	3,0
Human resources management	2	3,0
Current problems in taxation	1	2,0
Organization of taxation and in STS bodies	2	2,0
Taxation of natural persons incomes	2	2,0
Mortgage crediting	2	1,0
Agrarian policy	2	2,0
Management of regional development	2	2,0
Total		**17,0**

Master programme

TAXATION OF AGRICULTURAL ENTREPRENEURSHIP ENTITIES ACTIVITY

The programme provides theoretical and practical knowledge in entrepreneurship entities activity taxation, tax planning and forecasting, organization of optimal taxation, its methods and ways in the system of management of agricultural economy entities activity, corporate tax management to reduce the negative influence of enterprises taxation on their economic activity and financial state; acquiring professional skills in legal and natural persons tax management to train highly qualified specialists for tax bodies.

Disciplines course chosen by students	**Semester**	**Credits**
Tax policy	1	4,0
AWP of a tax inspector	1	3,0
Total		**7,0**

Proposed topics for master's papers:

1. Tax factors of agriculture development stimulation.
2. Optimization of tax payments by entrepreneurship agricultural entities.
3. Land taxation as a factor of territorial development stimulation.

RESEARCH-ORIENTED SPECIALIZATION

Disciplines course chosen by the university	Semester	Credits
Financial management	1	3,0
Human resources management	2	3,0
Current problems in taxation	1	2,0
Organization of taxation and in STS bodies	2	2,0
Taxation of natural persons incomes	2	2,0
Mortgage crediting	2	1,0
Theory of fiscal regulation of economy	2	2,0
Management of regional development	2	2,0
Total		**17,0**

Master programme

THEORETICAL AND METHODICAL PRINCIPLES OF TAXATION AND TAX REGULATION

The programme provides theoretical and practical knowledge in entrepreneurship entities activity taxation, tax planning and forecasting, analytical research aimed at the definition proper factors of taxation system function, complex estimation of taxation system, finding the reserves of taxation efficiency increase, quantative and qualititative characteristics of the processes taken place in the financial sphere of the country and determination of tax system efficiency on the whole and in separate branches, regions and tax payers, tax regulation as a component of state tax management and obtaining practical skills in the development of the common structure profitable part of the state budget and making tax regulations with the purpose of achieving of optimal tax payments and tax system.

Disciplines course chosen by students	Semester	Credits
Tax policy	1	4,0
Tax statistics and analysis	1	3,0
Total		**7,0**

Proposed topics for master's papers:

1. Scientific and methodical substantiation of land taxation principles in agricultural production.
2. Theoretical and methodical principles of improvement of agricultural production taxation.
3. Improvement of theoretical and methodical principles of tax planning and its optimization at agricultural enterprises.

MASTER DEGREE PROGRAMMES EDUCATIONAL AND SCIENTIFIC INSTITUTE OF QUALITY, STANDARDIZATION OF FOODSTUFF AND FOOD TECHNOLOGIES

Educational and scientific institute of quality and standardization of foodstuff and food technologies carries out educational, scientific-research, innovative, practical and methodological training, cultural and educative activities connected with obtaining higher education and acquiring qualification in specialities 8.000001 ”Quality, standardization and certification”, 8.091707 “Technology of meat storage, preserving and processing” and 8.091708 “Technology of fish and seafood storage, preserving and processing” aimed at solving current problems of quality of food raw materials and products, development and introduction of up-to-date technologies.

Administrative monitoring of master programmes is performed by:

Faculty of quality, standardization and certification of AIC products

Organizes and coordinates training of specialists to use up-to-date technologies of preprocessing, storage and processing of livestock and fish products, as well as specialists engaged in standardization, certification and quality of AIC products, carries out cultural and educative work with students.

The peculiarities of training process organization for Master students of educational and scientific institute of quality and standardization of foodstuff and food technologies are characterized by availability of practical and research specializations for every speciality. Thus, these graduates have an opportunity to prepare for practical work at agricultural enterprises, specializing in food production, at scientific establishments dealing with scientific problems, or to do postgraduate course. The graduates with Bachelor degree have an opportunity to continue studying on specialities referring to training direction “Specific categories”: “Pedagogics of Higher School”, “Quality, standardization and certification”, ‘Administrative management” and the specialty “State Service” of the training direction “State administration”

Centers of practical training for Master students are:

- *In specialty 8.000001 ”Quality, standardization and certification”* – SOE “Ukrainian scientific–research and training center on problems of standardization, certification and quality”; Ukrainian laboratory of quality and safety of AIC products; Ukrainian association of consumers; Bureau Veritas; PLC “TUF Reyland Ukraina”; public company “Test–consulting”; Ukrmetteststandart; private company “Galakton”; Scientific-technical center “Partner ISO”.

• *In specialty 8.091707 "Technology of storage, preserving and processing of meat"* – PLC "Rusanivsky meat-packing plant; private company "Kyivsky meat-processing plant"; public company "Myronivsky breadmaking"; private company "Chernigivsky meat-packing plant"; PLC "Idex"; training and production laboratory of cooked meats at manufacturing enterprise NULES Ukraine "Velykosnitynske" named after O.V. Muzychenko.

• *In specialty 8.091708 "Technology of storage, preserving and processing of fish and seafood"* – Southern manufacture "Prolyv" in Kerch; PLC "Fishing company "Bryz" in Berdiansk; public company "Divial-2000"; PLC "Pleyady"; public company "Interrybflot" in Sevastopol.

Relationships are established with partners from a number of leading European and American higher educational establishments including: Ghent university (Belgium), Humboldt university, Berlin (Germany), universities of Iowa, Minnesota, Louisiana and Purdue University (USA).

The faculty co-operates with Humboldt university in Berlin on joint master programme „Quality administration and management in agriculture". After successful graduation students receive diplomas of both educational establishments.

Specialities:

8.091707 – "Technology of meat storage, preserving and processing";

8.091708 –"Technology of fish and seafood storage, preserving and processing";

8.000001 – "Quality, standardization and certification".

Master qualification in employment according to the state classifier of professions in Ukraine:

In speciality 8.091707 "Technology of meat storage, preserving and processing" – master's degree in technology of meat storage, preserving and processing;

In speciality 8.091708 "Technology of fish and seafood storage, preserving and processing – master's degree in technology of fish and seafood storage, preserving and processing;

In speciality 8.000001 "Quality, standardization and certification"

2149.2 – quality engineer, 2149.2 – standardization engineer, 2149.2 – standardization and quality engineer, 2419.2 – certification expert, 2419.2 – standardization expert, 2419.2 – quality expert, 2419.2 – standardization, certification and quality expert, 2471 –control and quality expert.

Employment:

Masters apply for jobs at agricultural enterprises, scientific-research institutes of Ukrainian Academy of Sciences and Ukrainian Academy of Agricultural Sciences, regional and district agrarian administrations, leading agroindustrial and fish farms, meat and fish processing enterprises, as well as related businesses, organizations and firms that are engaged in organizational-administrative, production, pedagogical, project and research work dealing with improvement of present technologies and development of new methods of meat and fish production and semi-processed foods.

SPECIALITY
8. 091707 “TECHNOLOGY OF MEAT STORAGE, PRESERVING AND PROCESSING”

Master programme of production specialization

Technology of meat and meat foods production	MTSC of technology of livestock and fish products safety (educational building 1, room 72, tel. 527-88-85) Coordinator – candidate of engineering, associate prof. L.V.Bal’-Prylypko

Disciplines of master programme	Semester	Credits
Compulsory disciplines for all students of master course in NULES of Ukraine		
Philosophy of science and innovative development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products	1	1,0
Strategy of sustainable development of nature and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines according to the requirements of MES of Ukraine		
Current issues in the sector	1	10,0
Technology of meat preserving and storage	2	10,0
Technological calculations, accounting and reporting	2	4,0
Labour safety	1	7,0
Optimization technology in the sector	2	4,0
Total		**35,0**
Optional disciplines chosen by university	2,3	**17,0**
Optional disciplines chosen by students	3	**11,0**
State attestation		
Practical training	1,2	10,0
Preparation and defense of master's paper	3	10,0
Total		**20,0**
Total		**90,0**

PRODUCTION SPECIALIZATION

Optional disciplines chosen by university	Semester	Credits
Operation of technological equipment	2	4,0
Current research methods in the sector	2	4,0
Power supply of enterprises in the sector	3	5,0
Biologically active substances of animal raw materials	3	4,0
Total		**17,0**

Master programme

TECHNOLOGY OF MEAT AND MEAT FOODS

The main task of master programme is to train processing engineers specializing in technology of meat storage, preserving and processing, who will be able to work at meat processing plants as well as related businesses, organizations and firms that are engaged in organizational-administrative, production, pedagogical, project and scientific-research activities dealing with improvement of present technologies and development of new production technologies of meat and semi-processed foods.

Optional disciplines chosen by students	Semester	Credits
Fodder technology for livestock	3	6,0
Thermal supply of enterprises in the sector	3	5,0
Total		**11,0**

Proposed topics for masters' papers:

1. Ways of improvement in meat products technology.
2. New technologies of meat processing.
3. The use of food additives in meat products technology.

SPECIALTY
8.091708 “TECHNOLOGY OF FISH AND SEAFOOD STORAGE, PRESERVING AND PROCESSING”

Master programme of production specialization

Technology of fish and seafood storage, conservation and processing	MTSC of technology of livestock and fish products safety (educational building 1, room 72, tel. 527-88-85) Coordinator – candidate of engineering, associate prof. O.S.Vinnov

Disciplines of master programme	Semester	Credits
Compulsory disciplines for all students of master course in NULES of Ukraine		
Philosophy of science and innovative development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products	1	1,0
Strategy of sustainable development of nature and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines according to the requirements of MES of Ukraine		
Current issues in the sector	1	10,0
Technology of protein containing fish and seafood products	3	5,0
Technology of fish products storage and conservation	2	10,0
Technological calculations, accounting and reporting	2	4,0
Labour safety in the sector	1	7,0
Total		**42,0**
Optional disciplines chosen by university	2,3	**21,0**
Optional disciplines chosen by students	3	**6,0**
State attestation		
Practical training	1,2	10,0
Preparation and defense of master's paper	3	10,0
Total		**20,0**
Total		**90,0**

PRODUCTION SPECIALIZATION

Optional disciplines chosen by university	Semester	Credits
Operation of technological equipment	2	4,0
Current research methods in the sector	2	4,0
Power supply of enterprises in the sector	3	5,0
Optimization of production processes	2	4,0
Biologically active substances from fish and seafood	3	4,0
Total		**21,0**

Master programme

TECHNOLOGY OF FISH AND SEAFOOD STORAGE, PRESERVATION AND PROCESSING

The main task of master programme is to train processing engineers specializing in technology of fish and seafood storage, preserving and processing, who will be able to work at scientific-research institutions that deal with problems of fish and seafood processing technologies, in the departments of Ministry of agrarian policy and State committee of fish industry of Ukraine, particularly Southern SRI of sea, fish industry and oceanography, fish processing plants and vessels.

4. Ways of improvement in meat products technology.
5. New technologies of meat processing.
6. The use of food additives in meat products technology.

Optional disciplines chosen by students	Semester	Credits
Technology of fish flour production	3	6,0
Thermal supply of enterprises in the sector	3	6,0
Total		**6,0**

Proposed topics for masters' papers:

1. Effective use of smoking fluid in mackerel cold smoking process.
2. Improvement of tinned oil fish manufacturing process.
3. Use of enzymatic agents in production of protein hydrolyzate from Black Sea mussels.

SPECIALITY 8.000001 "QUALITY, STANDARDIZATION AND CERTIFICATION"

Master programmes of production specialization

Quality evaluation of crop production, water, soils and agrochemicals	TSC of agrochemical service, quality and safety of plant products (educational building 2, room 30, tel.: 527-88-17) Coordinator – candidate of agricultural sciences, acting associate prof. I.V. Loginova
Production quality, standardization and certification at the enterprises of poultry farming	TSC of poultry farming technology, its standardization and certification (educational building 7a, room 215, tel.: 527-87-60) Coordinator –doctor of agricultural sciences, professor, academician V.P.Boroday
Management of foodstuffs safety and quality	TSC of veterinary medicine of productive livestock (educational building 12, room 114, block A, ground floor, tel. 527-89-24) Coordinator –doctor of veterinarian sciences, professor, O.M. Yakubchak tel.: 527-88-41

Standardization and certification of agricultural machinery ***Standardization and quality management in plant growing mechanization service*** ***Standardization and quality management in stock-breeding mechanization service*** ***Standardization, certification and quality management in mechanization of agricultural products processing and storage***	TSC of agricultural machinery, standardization, certification and technical service (educational building 11, room 317, tel.: 527-82-15) Coordinator –doctor of engineering, professor V.I.Rubliov tel.: 527-88-53
Standardization, certification and quality management of energy supply and energy carriers ***Standardization, certification and quality management in electrification and automation of agriculture***	TSC of electrification and automation in enterprises (educational building 8, room 25, tel.: 527-83-25 Coordinator –doctor of engineering, professor L.S.Chervinsky
Ecological standardization and certification	TSC of ecological standardization and certification (educational building 17, room 214, tel.: 527-87-90) Coordinator –doctor of agricultural sciences, professor V.M.Chaika
Management of quality, standardization, and certification in agricultural enterprises, forestry complexes	TSC of forestry management, standardization and forest certification (educational building 1, room 98, tel.: 527-88-00 Coordinator – candidate of agricultural sciences, associate prof. P.V.Kravets'
Quality management in foreign economic activity ***Quality management in information consulting activity on commodity and service market***	TSC of agricultural management, marketing and AIC products quality management (educational building 10, room 401, tel.: 527-80-04) Coordinator –candidate of economic sciences, associate prof. P.I.Buriak

Expertise of plant variety and seed grain quality ***Evaluation of environmental impact and quality control*** ***Expertise and quality control of livestock fodder and products*** ***Expertise and quality control of biofuel and fuel lubricating materials*** ***Expertise and quality control of foodstuffs and food raw materials*** ***Expertise and quality control of livestock products (expert – analyst microbiologist)*** ***Expertise and quality control of livestock products (analyst – veterinary sanitary expert)*** ***Expertise and quality control of livestock products (analyst – biochemist)*** ***Expertise and quality control of fodder (analyst – toxicologist)*** ***Expertise of medicinal agents and quality control of livestock products content (veterinary analyst-pharmaceutist)***	TSC of standardization and certification of AIC products, technologies and production facilities (educational building 12, room 401, block D, tel. 527-86-39) Coordinator –doctor of chemical sciences, professor V.V.Maik

Master programme of research specialization

Indices research and methods of laboratory diagnostics of livestock and plant products	TSC of animal biology and laboratory diagnostics of livestock products quality and safety (educational building 12, block D, room 113, tel.: 527-88-64)

	Coordinator –doctor of veterinarian sciences, professor O.V.Yablonska

Disciplines of master programme	Semester	Credits
Compulsory disciplines for all students of master course in NULES of Ukraine		
International standardization, certification of technologies, raw materials, finished products	1	1,0
Business foreign language	1	1,5
Philosophy of science and innovative development	1	1,5
Strategy of sustainable development of nature and society	1	1,0
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
Total		**7,0**
Compulsory disciplines according to the requirements of MES of Ukraine		
Economic aspects of entrepreneurial activity	3	3,5
Legal support of managerial decision-making	3	3,5
Quality management	1	5,0
Standardization	1	4,5
Audit and certification	2	4,5
Research and innovation process	1	2,5
Basics of systematic approach and decision- making	3	4,5
Information technologies in quality, standardization and certification systems	1	4,5
Total		**32,5**
Optional disciplines chosen by university	1,2,3	**27,5**
Optional disciplines chosen by students	3	**6,0**
State attestation		
Practical training	1,2	14,0
Preparation and defense of master's paper	3	3,0
Total		**17,0**
Total		**90,0**

PRODUCTION SPECIALIZATION

Optional disciplines chosen by university	Semester	Credits
Monitoring and methods of agricultural products improvement	2	3,5
Quality management of agricultural products and production	2	5,0
Quality and safety of agricultural products	2	4,0
Standardization and certification of agricultural products	2	5,0
Environmental management	1	3,5
Hygiene of foodstuffs and food raw materials	3	4,5
World information resources	1	2,0
Total		**27,5**

Master programme

QUALITY ASSESSMENT OF PLANT PRODUCTS, WATER, SOILS AND AGROCHEMICALS

Master programme is aimed at advanced study of the following issues: legislative and regulatory support of fixing quality indices of plant products, water, soils and agrochemicals; up-to-date methods of control, sampling procedure; compliance with requirements to plant products, water, soils and agrochemicals; aspects and elements of quality and safety management of plant products.

Optional disciplines chosen by students	Semester	Credits
Monitoring of soils quality	3	3,0
Marketing in agrochemical service	3	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Index estimation of agrochemical, physical, chemical, biological characteristics of soils.
2. Quality and safety of soils and ways of their regulation.
3. Quality of agrochemicals in balanced nature management.

Master programme

PRODUCT QUALITY, STANDARDIZATION AND CERTIFICATION AT POULTRY INDUSTRY ENTERPRISES

Master programme is aimed at advanced study of product quality issues, standardization and certification at poultry industry enterprises, namely: legislative and regulatory support of rationing in poultry raising, receiving and processing poultry products, quality and safety management of poultry industry products; up-to-date control methods of obligatory indices; suitability evaluation procedure; ecological risk management in poultry industry.

Optional disciplines chosen by students	Semester	Credits
Biology of farm animals productivity	3	3,0
Fodder and additives production technology	3	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Product quality and safety management at poultry industry enterprises.
2. Quality and safety management of fodder and additives at poultry enterprises.
3. Standardization and certification of technologies and production at poultry enterprises.

Master programme

FOODSTUFFS SAFETY AND QUALITY MANAGEMENT

The programme is aimed at training specialists with profound knowledge in the field of foodstuffs quality and safety management, including: legislative and regulatory support of foodstuffs quality and safety issues in Ukraine, European Union and worldwide; system of foodstuffs safety management; system of foodstuffs quality management; system of monitoring foodstuffs quality and safety indices

Optional disciplines chosen by students	Semester	Credits
Veterinary sanitary and hygiene of processing livestock products	3	3,0
Sanitary microbiology	3	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Analysis of main discrepancies when introducing HACCP system at processing enterprises.
2. Monitoring the degree of introduction of HACCP system at Ukrainian enterprises and elaboration of proposals to stimulate domestic producers to introduce HACCP

Master programme

STANDARDIZATION AND CERTIFICATION OF AGRICULTURAL MACHINERY AND EQUIPMENT

The programme is aimed at developing in masters theoretical and practical skills on the issues of normative support of agricultural mechanization, its adaptation to international and European requirements, evaluation of agricultural mechanization impact on the environment, issues of safety and ergonomics of machinery, application of agricultural machinery in accordance with criteria of appropriate practice in plant growing and livestock raising, concepts of sustainable development of agrosphere. The programme includes the issues of providing top quality repair and maintenance of agricultural machinery.

Optional disciplines chosen by students	Semester	Credits
Standardization of agricultural machinery and equipment	3	6,0
Total		**6,0**

Proposed topics for masters' papers:

1. Quality evaluation analysis of modern agricultural machinery.
2. Analysis of suitability of agricultural machines for transportation and elaboration of researches for its provision.
3. Analysis of normative support of agricultural mechanization.
4. Quality service management in the operation of machines and equipment.

Master programme

STANDARDIZATION AND QUALITY MANAGEMENT OF SERVICE IN PLANT GROWING MECHANIZATION

The programme is aimed at developing in masters theoretical knowledge and practical skills on the issues of normative support of plant growing mechanization processes , its adaptation to international and European requirements, evaluation of plant growing mechanization impact on the environment, issues of safety and ergonomics of machinery, application of agricultural machinery in accordance with criteria of appropriate practice in plant growing, concepts of sustainable development of agrosphere. The programme includes the issues of providing top quality repair service and maintenance of agricultural machinery.

Optional disciplines chosen by students	Semester	Credits
Standardization and certification of agricultural machinery	3	6,0
Total		**6,0**

Proposed topics for masters' papers:

1. Analysis of the current research fund in plant growing and proposals for its improvement.
2. Quality evaluation analysis of modern grain-harvesting machinery and elaboration of methods of its statistic control.

Master programme

STANDARDIZATION AND QUALITY SERVICE MANAGEMENT IN LIVESTOCK MECHANIZATION

The programme is aimed at developing in masters theoretical knowledge and practical skills on the issues of normative support of livestock mechanization processes, its adaptation to international and European requirements, evaluation of livestock mechanization impact on the environment, product quality, issues of safety and ergonomics of machinery, application of agricultural machinery in accordance with criteria of appropriate practice in livestock, concepts of sustainable development of agrosphere, the need for alternative farming. The programme includes the issues of providing top quality repair service and maintenance of agricultural machinery.

Optional disciplines chosen by students	Semester	Credits
Quality evaluation, standardization and certification of livestock products in food chain.	3	6,0
Total		**6,0**

Proposed topics for masters' papers:

1. Quality evaluation analysis of modern machinery on livestock farms.
2. Analysis of normative provision of modern foraging machinery and elaboration of proposals for its improvement.
3. Quality management of service in maintenance of agricultural machinery and equipment.
4. Quality management in providing mechanization services to various livestock branches.

Master programme

STANDARDIZATION, CERTIFICATION AND MANAGEMENT OF MECHANIZATION QUALITY OF AGRICULTURAL PRODUCTS PROCESSING AND STORAGE

The programme is aimed at developing in masters theoretical knowledge and practical skills on the issues of normative support of agricultural products processing and storage, adaptation of requirements for processing and storage to international and European standards, evaluation of their impact on quality and safety of livestock and plant products, the use of appropriate criteria for processing and storage of raw materials. The programme includes the issues of evaluating safety risks when processing and storing products and raw materials, as well as taking actions to reduce those risks.

Optional disciplines chosen by students	Semester	Credits
Quality evaluation, standardization and certification of processes and machinery for agricultural products processing and storage	3	6,0
Total		**6,0**

Proposed topics for masters' papers:

1. Quality evaluation analysis of modern machines for agricultural products processing.
2. Analysis of suitability of agricultural machines for transportation and elaboration of methods for its supply.
3. Analysis of normative supply of agricultural machines for processing and storage.
4. Management of quality of agricultural products processing and storage

Master programme

STANDARDIZATION, CERTIFICATION AND QUALITY MANAGEMENT OF ENERGY RESOURCES AND ENERGY CARRIERS

The programme is aimed at developing experts on the following issues: elaboration, introduction and improvement of regulatory and legal acts (technical regulations) and normative documentation on standardization, certification and quality management of energy resources and energy carriers; regulatory activity on the issues of state monitoring of adherence to standards and rules of production and allocation of energy resources and energy carriers; management of risks in this branch; aspects and elements of environmental management system; standardization of electrical equipment.

Optional disciplines chosen by students	Semester	Credits
Standardization of energy resources and energy carriers	3	6,0
Total		**6,0**

Proposed topics for masters' papers:

1. Elaboration of technical regulations in power engineering for agricultural production in Ukraine.
2. Research of regulatory activity on the issues of state monitoring of adherence to standards and rules in power engineering for agricultural production in Ukraine.

Master programme

STANDARDIZATION, CERTIFICATION AND QUALITY MANAGEMENT IN ELECTRIFICATION AND AUTOMATION OF AGRICULTURE

The programme is aimed at developing in masters theoretical knowledge and practical skills on the issues of normative support of electrification and automation of agriculture, adaptation of technical requirements to international and European standards, evaluation of the impact of automation in agriculture on the environment, product quality, issues of safety and ergonomics of machinery, application of agricultural machinery in accordance with criteria of appropriate practice in plant growing and livestock, concepts of sustainable development of agrosphere. The programme includes issues of providing top quality repair service and maintenance of agricultural machinery.

Optional disciplines chosen by students	Semester	Credits
Standardization of electrical equipment	3	6,0
Total		**6,0**

Proposed topics for masters' papers:

1. Elaboration of technical regulations in power engineering for agricultural production in Ukraine.
2. Research of regulatory activity on the issues of state monitoring of adherence to standards and rules in power engineering for agricultural production in Ukraine.

Master programme

ECOLOGICAL STANDARDIZATION AND CERTIFICATION

The programme is aimed at training master students on the issues of elaboration, introduction and improvement of systems of ecological management in conformity with international standards, ecological standardization, ecological marking and declaring, management of ecological risks during economic operations, evaluation of environmental quality, creating reporting system of ecological risks, adaptation of national environmental legislation and requirements, use of genetically modified organisms in accordance with international and European standards.

Optional disciplines chosen by students	Semester	Credits
Ecological standardization and certification	3	3,0
Agroeconomic monitoring and certification of territories and enterprises	3	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Monitoring of water resources quality.
2. Quality evaluation of biosphere resources.

Master programme

MANAGEMENT OF QUALITY, STANDARDIZATION AND CERTIFICATION AT THE ENTERPRISES AND ORGANIZATIONS OF FOREST COMPLEX

The programme is aimed at training masters to resolve organizational problems of raw materials quality in forest complex, adaptation of regulatory requirements for processes and products to principles of international and European regulatory and legal documents. The programme includes issues of certification in forest complex, adaptation of national certification procedure to international standards.

Optional disciplines chosen by students	Semester	Credits
Evaluation of land quality and increased efficiency of nursery gardens and forest plantations	3	3,0
Foreign economic activity in forest complex	3	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Elaboration of standards on saplings of hardwood.
2. Quality evaluation of forest resources.

Master programme

QUALITY MANAGEMENT IN FOREIGN ECONOMIC ACTIVITY

Master programme is aimed at training specialists on the issues of quality and safety management of products, raw materials and technologies in AIC in accordance with advanced international practices, such as: introduction and development of regulatory and legal acts (technical regulations) and regulatory documentation on quality, standardization and certification of AIC products: management of marketing and logistics as a component of quality and safety of products, raw materials and technologies; evaluation of service quality; system of quality management in foreign economic activity (international agreements in trade sector and agricultural production).

Optional disciplines chosen by students	Semester	Credits
Statistical methods in quality management	3	6,0
Total		**6,0**

Proposed topics for masters' papers:

1. Development of the system of quality management based on TQM principles.
2. Elaboration of proposals to stimulate domestic producers to introduce ДСТУ ISO/22000-2007.
3. Standardization and protection of intellectual property rights.

Master programme

QUALITY MANAGEMENT IN INFORMATION CONSULTING ACTIVITY ON COMMODITY AND SERVICE MARKET

Master programme is aimed at advanced study of the following issues: normative and legal acts and regulatory provision of quality and safety of agricultural and food products in Ukraine, EU and worldwide; quality management in service sector and information consulting activity; system of environmental management; requirements to personnel.

Optional disciplines chosen by students	Semester	Credits
Personnel management	3	6,0
total		**6,0**

Proposed topics for masters' papers:

1. Managing personnel motivation in the process of introduction or functioning of management systems.
2. The role of time and stress management in the process of introduction or functioning of quality management system.

Master programme

EXPERTISE OF PLANT VARIETIES AND QUALITY OF SEED GRAIN

Master programme is aimed at advanced study of the following issues: regulatory and legal support of indices regulation of plant products quality, aspects and elements of management of plant products quality and safety.

Optional disciplines chosen by university	Semester	Credits
Chromatographic methods of analysis	3	4,0
Spectroscopic methods of analysis	3	4,0
Electrochemical methods of analysis	3	4,0
Biological methods of analysis	3	3,0
Metrology	3	2,5
Analysis of plant products and soils	2	2,0
Standardization, certification of plant products and soils	2	5,0
Quality management of plant products	2	3,0
Total		**27,5**
Optional disciplines chosen by students		
Expertise of seed grain quality	3	3,0
Varietal certification of agricultural crops	3	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Evaluation of indices of agrochemical characteristics of soils.
2. Quality of agrochemicals in rational management of nature.

Master programme

ECOLOGICAL EXPERTISE AND QUALITY CONTROL OF ENVIRONMENT

The programme is aimed at training students on the issues of elaboration, introduction and improvement of systems of ecological management in accordance with international standards, ecological standardization, ecological marking and declaring, management of ecological risks in economic activity, evaluation of environmental quality.

Optional disciplines chosen by university	Semester	Credits
Chromatographic methods of analysis	3	4,0
Spectroscopic methods of analysis	3	4,0
Electrochemical methods of analysis	3	4,0
Biological methods of analysis	3	3,0
Principles of chemometrics and chemical metrology	3	2,5
Management of environmental systems quality	2	2,0
Ecological management	2	5,0
Ecological audit and inspection	2	3,0
Total		**27,5**
Optional disciplines chosen by students		
Ecological standardization and certification	3	3,0
Ecological expertise in AIC	3	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Monitoring of water resources quality.
2. Quality evaluation of biosphere resources.

Master programme

EXPERTISE AND QUALITY CONTROL OF FODDER AND LIVESTOCK PRODUCTS

Master programme is aimed at advanced study of the following issues: quality of fodder and livestock products, standardization and certification on poultry industry enterprises; modern methods of compulsory indices control; conformity evaluation procedure.

Optional disciplines chosen by university	Semester	Credits
Chromatographic methods of analysis	3	4,0
Spectroscopic methods of analysis	3	4,0
Electrochemical methods of analysis	3	4,0
Kinetic, biochemical and biological methods of analysis	3	3,0
Principles of chemometrics and chemical metrology	3	2,5
Analyses of environmental objects and macro systems	3	2,0
Metrology, standardization, certification of fodder and livestock products	2	5,0
Management of fodder and livestock products quality	2	3,0
Total		**27,5**
Optional disciplines chosen by students		
Management of quality production of milk and dairy products	3	3,0
Control of production and use of fodder crops	3	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Management of livestock products quality and safety.
2. Management of quality and safety of fodder and fodder additives.

Master programme

EXPERTISE AND QUALITY CONTROL OF BIOFUEL AND FUEL LUBRICATING MATERIALS

The programme is aimed at developing in masters theoretical knowledge and practical skills on the issues of normative support of agricultural mechanization, adaptation of technical requirements to international and European standards, evaluation of the impact of mechanization in agriculture on the environment, issues of safety and ergonomics of machinery, biofuel quality control.

Optional disciplines chosen by university	Semester	Credits
Core methods and devices for laboratory research	3	2,0
Chromatographic methods of analysis	3	4,0
Spectroscopic methods of analysis	3	4,0
Electrochemical methods of analysis	3	3,0
Kinetic, biochemical and biological methods of analysis	3	3,0
Principles of chemometrics and chemical metrology	3	2,5
Analyses of environmental objects and macro systems	3	2,0
Standardization, certification of biofuel		3,0
Management of fuel and fuel-lubricating materials quality	2	4,0
Total		**27,5**
Optional disciplines chosen by students		
Control of fuel-lubricating materials quality	3	3,0
Control of biofuel quality	3	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Analysis and control of biofuel quality.
2. Control of fuel-lubricating materials.

Master programme

EXPERTISE, QUALITY CONTROL OF FOODSTUFFS AND FOOD RAW MATERIALS

The programme is aimed at training specialists on the issues of regulatory support of production, control of safety and quality of foodstuffs and food raw materials, the issues of qualimetry, metrology, organization of laboratory activity, elaboration of quality and safety indices of foodstuffs, food raw materials using up-to-date methods, instruments and equipment.

Optional disciplines chosen by university	Semester	Credits
Basic methods and laboratory instruments	3	2,0
Chromatographic methods of analysis	3	4,0
Spectroscopic methods of analysis	3	4,0
Electrochemical methods of analysis	3	3,0
Kinetic, biochemical and biological methods of analysis	3	3,0
Principles of chemometrics and chemical metrology	3	2,5
Analyses of environmental objects and macro systems	3	2,0
Metrology, standardization, certification of foodstuffs	2	3,0
Quality management of raw food and foodstuffs	2	4,0
Total		**27,5**
Optional disciplines chosen by students		
GMO and methods of their determination	3	3,0
Sanitary and food hygiene	3	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Scientific approaches to risk assessment and management of hazardous factors in food production
2. Improving methods of complex determining the quality of food products.
3. Monitoring of toxic elements in food products.
4. Monitoring of GMOs in food.

Master programme

EXPERT ANALYSIS AND QUALITY CONTROL OF PRODUCTS OF ANIMAL ORIGIN (expert - analyst microbiologist)

The programme aims to train specialists with fundamental knowledge in management of safety and quality of food products, including the following issues: regulatory and legal support.

Optional disciplines chosen by university	Semester	Credits
Basic methods and laboratory instruments	3	2,0
Chromatographic methods of analysis	3	4,0
Spectroscopic methods of analysis	3	4,0
Electrochemical methods of analysis	3	3,0
Kinetic, biochemical and biological methods of analysis	3	3,0
Principles of chemometrics and chemical metrology	3	2,5
Analyses of environmental objects and macro systems	3	2,0
Metrology, standardization, certification of foodstuffs	2	3,0
Quality management of raw food and foodstuffs	2	4,0
Total		**27,5**
Optional disciplines chosen by students		
Sanitary microbiology and technology principles of meat and meat products manufacture	3	3,0
Sanitary microbiology of livestock products	3	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Analysis of major inconsistencies in the implementation of HACCP system at the enterprises.
2. Monitoring the degree of implementation of HACCP system at the enterprises.

Master programme

EXPERT ANALYSIS AND QUALITY CONTROL OF PRODUCTS OF ANIMAL ORIGIN (analyst-veterinary sanitary expert)

The programme aims to train specialists with profound knowledge on the issues of quality and food safety in Ukraine, EU and international practice.

Optional disciplines chosen by university	Semester	Credits
Basic methods and laboratory instruments	3	2,0
Chromatographic methods of analysis	3	4,0
Spectroscopic methods of analysis	3	4,0
Electrochemical methods of analysis	3	3,0
Kinetic, biochemical and biological methods of analysis	3	3,0
Principles of chemometrics and chemical metrology	3	2,5
Analyses of environmental objects and macro systems	3	2,0
Metrology, standardization, certification of foodstuffs	2	3,0
Quality management of raw food and foodstuffs	2	4,0
Total		**27,5**
Optional disciplines chosen by students		
Veterinary and sanitary expertise of milk and meat	3	3,0
Monitoring of quality indices of livestock products	3	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Improvement of quality management systems on the basis of TQM principles.

Master programme

EXPERT ANALYSIS AND QUALITY CONTROL OF PRODUCTS OF ANIMAL ORIGIN (analyst-biochemist)

International practice on the issues of quality and livestock products safety requires carrying out special biochemical researches using up-to-date analytical instruments.

Optional disciplines chosen by university	Semester	Credits
Basic methods and laboratory instruments	3	2,0
Chromatographic methods of analysis	3	4,0
Spectroscopic methods of analysis	3	4,0
Electrochemical methods of analysis	3	3,0
Kinetic, biochemical and biological methods of analysis	3	3,0
Principles of chemometrics and chemical metrology	3	2,5
Analyses of environmental objects and macro systems	3	2,0
Metrology, standardization, certification of foodstuffs	2	3,0
Quality management of raw food and foodstuffs	2	4,0
Total		**27,5**
Optional disciplines chosen by students		
Organization and carrying out laboratory biochemical researches	3	3,0
Up-to-date laboratory methods of biochemical researches	3	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Influence of cesium on mineral metabolism of rabbits.
2. Biochemical changes of carbohydrate metabolism in animals.

Master programme

EXPERT ANALYSIS AND QUALITY CONTROL OF FODDER (analyst-toxicologist)

Chemical toxicological analysis in veterinary medicine, its peculiarities and distinctions from other studies in modern biology and instrumental methods of detecting toxicoplants in fodder.

Optional disciplines chosen by university	Semester	Credits
Basic methods and laboratory instruments	3	2,0
Chromatographic methods of analysis	3	4,0
Spectroscopic methods of analysis	3	4,0
Electrochemical methods of analysis	3	3,0
Kinetic, biochemical and biological methods of analysis	3	3,0
Principles of chemometrics and chemical metrology	3	2,5
Analyses of environmental objects and macro systems	3	2,0
Metrology, standardization, certification of foodstuffs	2	3,0
Quality management of raw food and foodstuffs	2	4,0
Total		**27,5**
Optional disciplines chosen by students		
Principles of chemical and toxicological analysis	3	2,0
Methods of chemical and toxicological analysis	3	2,0
Requirements in chemical and toxicological analysis	3	1,0
Forensic chemical and toxicological expertise	3	1,0
Total		**6,0**

Proposed topics for masters' papers:

1. Application of biological objects to determine the toxicity of forage.

Master programme

EXPERT ANALYSIS OF MEDICINES AND QUALITY CONTROL OF PRODUCTS OF ANIMAL ORIGIN AND THEIR CONTENTS (Analyst- veterinary pharmacist)

Analysis of chemical synthesis of substances used as medicines for the content of active substances and presence of impurities.

Optional disciplines chosen by university	Semester	Credits
Basic methods and laboratory instruments	3	2,0
Chromatographic methods of analysis	3	4,0
Spectroscopic methods of analysis	3	4,0
Electrochemical methods of analysis	3	3,0
Kinetic, biochemical and biological methods of analysis	3	3,0
Principles of chemometrics and chemical metrology	3	2,5
Analyses of environmental objects and macro systems	3	2,0
Metrology, standardization, certification of foodstuffs	2	3,0
Quality management of raw food and foodstuffs	2	4,0
Total		**27,5**
Optional disciplines chosen by students		
Pharmaceutical chemistry - methods of qualitative detection of active ingredients in herbal medicinal raw materials.	3	3,0
Methods of detecting residues of medicines in animals, livestock products, fodder, food products controlled by veterinary service	3	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Comparative evaluation of mineral tanning properties of vegetable raw materials.

RESEARCH SPECIALIZATION

Optional disciplines chosen by university	Semester	Credits
Monitoring and methods of improving agricultural products	2	3,5
Quality management of agricultural products and production	2	5,0
Quality and safety of agricultural products	2	4,0
Standardization and certification of agricultural products	2	5,0
Environmental management	1	3,5
Hygiene of food and raw foodstuffs	3	4,5
World information resources	1	2,0
Total		**27,5**

INDEX RESEARCH AND METHODS OF LABORATORY DIAGNOSTICS OF PRODUCTS OF ANIMAL AND VEGETABLE ORIGIN

Master programme covers the following issues: analysis of legal acts and regulations (international and national standards) on quality and product safety, collection and systematization of best practices in regard to methods of monitoring and ensuring quality and safety, decision-making about product quality or resolving disputable questions, control and monitoring the activities to determine product quality and safety, product quality evaluation at the enterprise, development of recommendations and measures to improve product quality.

Optional disciplines chosen by students	Semester	Credits
Laboratory diagnostics of quality and safety of products of animal and vegetable origin.	3	6,0
Total		**6,0**

Proposed topics for masters' papers:

1. Monitoring quality of water biological resources.
2. Evaluation of quality of biosphere resources (water, soil, air, crop and livestock production, forestry, fish farming).

MASTER PROGRAMMES FOR TRAINING EXPERTS-ANALYSTS

SPECIALITY
8.130501 ”VETERINARY MEDICINE”

Disciplines of master programme	Semester	Credits
Compulsory disciplines for all students of master course in NULES of Ukraine		
Philosophy of science and innovative development	1,2	1,0
Strategy of sustainable development of nature and society	1,2	1,0
Total		**2,0**
Compulsory disciplines according to the requirements of MES of Ukraine		
Business foreign language	1	1,5
Research methods	1	2,0
Pathological physiology	1	2,0
Comparative anatomy	1	2,0
Clinical pharmacology	1	2,0
Clinical biochemistry	1	2,0
Clinical diagnostics	1	2,0
Pathological anatomy and forensic veterinary	1	2,0
Management and marketing in veterinary medicine	1	2,0
Veterinary-sanitary expertise and the principles of technology and standardization of livestock products	1	4,0
Non-contagious diseases of animals	2	6,0
Infectious diseases	2	6,5
Total		**33,5**
Optional disciplines chosen by university	1	**3,0**
Optional disciplines chosen by students	2	**12,5**
State attestation		
Practical training	2	6,0
Preparation and defense of master’s paper	2	3,0
Total		**9,0**
Total		**60,0**

PRODUCTION SPECIALIZATION

Optional disciplines chosen by university	Semester	Credits
Quality system and information technologies in veterinary medicine	1	1,0
Legislation on veterinary medicine (WTO, EU, regional standards)	1	2,0
Total		**3,0**

Master programme

MICROBIOLOGY IN VETERINARY MEDICINE

Provides training of masters – veterinary-bacteriologists who will work in veterinary diagnostic laboratories. Students gain proficiency in up-to-date methods of laboratory diagnostics of bacterial infections in animals.

Optional disciplines chosen by students	Semester	Credits
Principles of molecular microbiology	2	4,0
Anti-infectious immunity in animals	2	1,0
Laboratory diagnostics of bacterial infections in animals (*classical and modern (genetic analysis of genomic, PCR diagnosis, ELISA methods, etc.), methods of pathogens identification recommended by the International Bureau of epizootology*)	2	7,5
Total		**12,5**

Proposed topics for masters' papers:

1. Comparative evaluation of nutrient medium designed for selection and cultivation M. Bovis.
2. Express diagnostics of bacterial infections in animals.
3. Retrospective diagnostics of bacterial infections in animals.
4. Differential-diagnostic nutrient media in the laboratory diagnostics of bacterial infections.

Master programme

VIROLOGY IN VETERINARY MEDICINE

Provides training of masters – veterinary-virologists who will work in veterinary diagnostic laboratories. Students gain proficiency in up-to-date methods of laboratory diagnostics of viral infections in animals.

Optional disciplines chosen by students	Semester	Credits
Principles of molecular virology	2	4,0
Anti-infectious immunity in animals	2	1,0
Laboratory diagnostics of viral infections in animals (*classical and modern (genetic analysis of genomic, PCR diagnosis, ELISA methods, etc.), methods of virus identification recommended by the International Bureau of epizootology*)	2	7,5
Total		**12,5**

Proposed topics for masters' papers:

1. Comparative evaluation of laboratory methods for diagnosis of rabies.
2. Permanent cell lines in virology.
3. Molecular genetic diagnostics of viral infections of animals.

Master programme

IMMUNOLOGY IN VETERINARY MEDICINE

Provides training of masters – veterinary-immunologists (serologists) who will work in veterinary diagnostic laboratories. Master students gain proficiency in up-to-date immunological (serological) methods of diagnosing infectious animal diseases, defining immunity stress, study the principles of monitoring studies.

Optional disciplines chosen by students	Semester	Credits
Principles of molecular immunology	2	4,0
Immunological (serological) methods of diagnosing infectious animal diseases *(classical and modern methods recommended by the International Bureau of epizootology*)	2	7,5
Immunization in veterinary medicine	2	1,0
Total		**12,5**

Proposed topics for masters' papers:

1. Immunological methods for detection of antibodies and identification of infectious agents.
2. Serological reactions as a tool for monitoring infections in veterinary medicine.
3. Serological control of immunity stress in animals.

Master programme

IMMUNOBIOTECHNOLOGY

Provides training of masters – veterinary-immunobiotehnologists who will work at the enterprises producing immunological preparations. Students study the organization of production of immunological preparations, principles of design, production and control of vaccines, sera, probiotics, immunoglobulins, interferon. Master students gain proficiency in up-to-date methods of obtaining and cultivating producers (superproducers) of immunotropic products.

Optional disciplines chosen by students	Semester	Credits
Principles of molecular immunology	2	4,0
Eleboration and production of immunological means *(synthesis of DNA fragments - determinants of target products (antigens, etc.), obtaining recombinant proteins, monoclonal antibodies, etc.).*	2	7,5
Laboratory diagnosis and immunization of infectious animal diseases (*classical and modern (genetic analysis of genomic, PCR diagnostics, ELISA methods, etc.) methods of identification agents of infectious diseases recommended by the International Bureau of epizootology)*	2	1,0
Total		**12,5**

Proposed topics for masters' papers:

1. The use of postfusional technology in developing effective tools for diagnostics of infectious animal diseases.
2. Principles of designing living and inactivated vaccines.
3. Scientific principles of designing probiotics for veterinary medicine.
4. The use of cell cultures and chicken embryos in the process of obtaining immunologic preparations.

Master programme

CHEMICAL-TOXICOLOGICAL ANALYSIS

Organizational principles of toxicological, chemical and analytical laboratories. Sampling for research. Extraction of toxic substances from biological material and fodder. Cleaning of extracts and preparation of samples to identify toxic substances. Methods for identification of toxic substances. Principles of forensic chemical expertise.

Optional disciplines chosen by students	Semester	Credits
Principles of chemical toxicological analysis	2	4,0
Physico-chemical and biological methods in chemical-toxicological analysis *(physical and chemical methods: photoelectrocolormetric method, thin layer, gas liquid and highly effective liquid chromatography, spectrophotometry, chemiluminescence; biological methods: immunological biotest on animals, alimentary test on animals to determine toxicity on rabbits, chicken wattle, sensitive microorganisms, fish, chicken embryos, cell cultures, bull sperm, Kress salad)*	2	4,0
GLP system in chemical-toxicological analysis	2	2,5
Principles of forensic chemical expertise	2	2,0
Total		**12,5**

Proposed topics for masters' papers:

1. Chemical toxicological analysis after urethane pesticide poisoning.
2. Mycotoxicological analysis of fodder using live test-objects.
3. Forensic chemical expertise after nitrate poisoning of animals.

Master programme

METHODS OF BIOCHEMICAL RESEARCH IN VETERINARY MEDICINE

Carrying out biochemical analysis of the environment and macrosystems, analytical, biochemical, physical and chemical analysis in industrial laboratories for different purposes. The acquired knowledge will enable experts to work in veterinary medicine laboratories, diagnostic centres, analytical laboratories of companies engaged in manufacturing, processing, storage and selling of agricultural products.

Optional disciplines chosen by students	Semester	Credits
Special biochemistry	2	4,0
Current methods and instruments of biochemical research in veterinary medicine (*gas-liquid, highly effective liquid chromatograph: determination of chlorine and organophosphorous pesticides, pyrethroids, sim-triazins; atomic absorptive spectrophotometers: determination of heavy metals content; DNA sequenator: sequence hemagglutinin gene, DNA certification, methods: polymerase chain reaction, qualitative determination of GMO using immunochromatographic method*)	2	8,5
Total		**12,5**

Proposed topics for masters' papers:

1. Atomic absorption analysis in the study of biological models of poisoning by heavy metals.
2. Chromatographic pesticide research in environmental objects.

Master programme

DIAGNOSTICS OF INVASIVE DISEASES IN ANIMALS

Carrying out ante- and post-mortem diagnostics of helminthoses in animals, development of advanced measures against the most common invasive diseases of farm and domestic animals.

Optional disciplines chosen by students	Semester	Credits
Biological principles of parasitism	2	3,0
Methods of diagnostics of invasive diseases of animals (*ELISA, PCR*, *specific diagnostic methods of helminthoses, entomoses, protozoan and tropical diseases*)	2	6,0
Quality evaluation of animal carcasses with invasive diseases	2	2,0
Impact of parasites on anatomical and morphological structure of organs and tissues	2	1,5
Total		**12,5**

Proposed topics for masters' papers:

1. Prevalence of fluke larvae in freshwater molluscs and spread of invasive fasciolosis in animals.
2. Use of immune-enzyme diagnostics of animal trichinosis.
3. Diagnostics of parasitic diseases of freshwater fish.

Master programme

RADIATION BIOLOGY

The programme studies conditions of livestock keeping, feeding, production, which provide the radiation safety of animals and animal products situation on territories contaminated with radionuclides; the impact of ionizing radiation on parameters of immunologic reactivity of farm animals, ways of intake and concentration of radionuclides in the body of farm animals. The programme also provides knowledge for veterinary and sanitary expertise of livestock products on the contaminated territories, enables to predict radiation safety of farm animals, develops skills of radiometric examination of animals and animal products.

Optional disciplines chosen by students	Semester	Credits
Radiology of farm animals	2	4,0
Dosimetry and radiometry of objects under veterinary supervision	2	3,5
Radiation hygiene	2	3,0
Radiation toxicology ($^{90}Sr, ^{131}I, ^{137}Cs, ^{239}Pn, ^{241}Am$)	2	1,0
Radiation immunology	2	1,0
Total		**12,5**

Proposed topics for masters' papers:

1. Influence of Polissia endemic zone on formation of veterinary pathology after the Chernobyl accident.
2. Evaluation of effectiveness of antiradiation measures in livestock production in the remote period after the Chernobyl accident.
3. Radioecological expertise of livestock products on the contaminated territories.
4. Impact of animal products on radiation dose in the population living on contaminated territories.

SPECIALITY
8.130102 “AGRONOMY”

Disciplines of master programme	Semester	Credits
Compulsory disciplines according to the requirements of MES of Ukraine		
Business foreign language	1	3,0
Philosophy of science	1	3,0
Agricultural and environmental law	1	1,5
Current problems in agroecology	1	1,5
Psychology and pedagogy	2	3,0
Information technologies	1	4,5
Economics and organization of agricultural service	2	3,0
Geographical information systems	1	3,0
Modeling technological processes and systems	1	3,0
Adaptive systems in agriculture	1	2,5
Methods and organization of research in agronomy	1	1,5
Prediction and crop programming	1	2,5
Biotechnology in plant growing	2	2,5
Special genetics	2	1,5
Systems of current intensive technologies	2	1,5
World agrotechnologies	2	1,5
Total		**39,0**
Optional disciplines chosen by university	2	**12,0**
Optional disciplines chosen by students	3	**13,0**
State attestation		
Practical training	1,2	14,0
Preparation and defense of master’s paper	3	12,0
Total		**26,0**
Total		**90,0**

PRODUCTION SPECIALIZATION

Master programme

TECHNOLOGICAL QUALITY CONTROL IN STORAGE AND PROCESSING PLANT PRODUCTS (TECHNOLOGIST-EXPERT-ANALYST)

Plant products - grain flour, cereal crops, raw oil change during storage and processing. To get finished products that meet the existing standards it is required to keep regular technological control of production, as well as biochemical control of products. Master programme is aimed at advanced study of biochemical changes in crop production during its storage and processing, and development of effective methods of technological and biochemical control.

Optional disciplines chosen by university	Semester	Credits
Laboratory research methods of fresh and processed plant products (*quality indicators, which are regulated by standards for crop production*)	2	4,0
Biochemical changes in plant products *(determination of dry matter, soluble dry matter, sugars, organic acids, bioactive substances and their changes during storage and processing)*	2	2,0
Technology of processing plant products	2	3,0
Technological and technochemical control of plant products processing (*determination of quality that are regulated by standards for food processing plant production*)	2	3,0
Total		**12,0**
Optional disciplines chosen by students		
Biological methods of analysis *(microbiological analysis of grain mass and other crop production)*	3	4,0
Spectroscopic methods of analysis *(detection of residual quantity of aflatoxin, mycotoxin, pesticides and agricultural chemicals, determination of macro-and microelements)*	3	6,0
Plant biochemistry *(determination of vitamins PP, C, D, K, protein, fat, carbohydrates, amino acid composition)*	3	3,0
Total		**13,0**

Proposed topics for masters' papers:

1. Biochemical changes in corn and other crop production in the process of refining and long-term storage.
2. Technological and biochemical quality control in processing plant products.
3. Biochemical changes in vegetable products after harvesting and during processing.
4. Technochemical control of storage and production of main plant products.

Master programme

STANDARDIZATION, CERTIFICATION AND SEED QUALITY OF AGRICULTURAL CROPS

The program includes studying world seed certification schemes, intended for international trade under OECD seed schemes, which are currently integrated in Ukraine and current national and international legislative and regulatory framework of seed and planting material, principles of formation and functioning of seed market in the world and Ukraine, the current state, trends and directions of its development, characteristics of domestic and foreign pricing for seed crops.

Optional disciplines chosen by university	Semester	Credits
Laboratory research methods (*DNA certification of varieties, hybrids*)	2	3,0
Seed growing (*breathing intensity, duration, biochemical and physiological properties of seed*)	2	3,0
Varietal identification and inspection (*testing, field inspections, varietal schemes OECD*)	2	3,0
Methods for analyzing seed quality (*similarity, viability, seed moisture, weight 1000, seed injury*)	2	3,0
Total		**12,0**
Optional disciplines chosen by students		
Biological methods of analysis (*aflatoxins, mycotoxins*)	2	4,0
Standardization, certification and seed quality of agricultural crops (*requirement standards for seed crops*)	2	6,0
Plant biochemistry (*amino acid analysis, content and qualitative composition of fat, protein*)	2	3,0
Total		**13,0**

Proposed topics for masters' papers:

1. International and national seed certification and standardization.
2. Identification of variety, hybrid and protective criteria.
3. Methods of determining sowing qualities of seeds according to international standards.
4. Agrotechnological study and experience in growing high-quality seed crops of different classification groups.
5. Elaboration of measures to reduce seed injury at all stages of production – growing, harvesting and storing crops of different classification groups.

SPECIALITY
8.130101 „ AGRICULTURAL CHEMISTRY AND SOIL SCIENCE”

Disciplines of master programme	Semester	Credits
Compulsory disciplines for all students of master course in NULES of Ukraine		
Philosophy of science and innovative development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
Business foreign language	1	1,5
Всього		**5,0**
Compulsory disciplines according to the requirements of MES of Ukraine		
Management psychology	1	1,5
Labour safety in the sector	1	2,0
Computer programming of soil fertility and crop yields	2	2,0
GIS of landscapes and principles of geostatistics	2	2,0
Environmental chemistry	1	4,0
Management of soil profiles	2	4,5
Protection and restoration of soil fertility	1	6,0
Management of nutrition in hothouses and drip irrigation	2	4,0
Soil quality, standardization and certification of products	3	3,0
Agrochemical service	2	4,5
Recycling and disposal of agricultural waste	3	4,0
Technology of rational land use	1	4,0
Radioecology	1	2,0
Total		**43,5**
Optional disciplines chosen by university	1,2	**10,0**
Optional disciplines chosen by students	3	**8,5**
State attestation		
Practical training	1,2	14,0
Preparation and defense of master’s paper	3	9,0
Total		**23,0**
Total		**90,0**

PRODUCTION SPECIALIZATION

Master programme

MONITORING OF QUALITY AND SAFETY OF SOILS, FERTILIZERS AND CROP PRODUCTION (AHROCHEMIST-PEDOLOGIST-ANALYST)

Monitoring quality and safety of soils, fertilizers and crop production is essential for protection and soil conservation and production of ecologically friendly products. Master programme aims to study methods of analysis of soils, fertilizers and crop production. Analytical and practical application of up-to-date methods of soil survey, remote sensing of soil, drawing agrochemical cartograms, field passports.

Optional disciplines chosen by university	Semester	Credits
Chromatographic methods of analysis (*aflatoxins, mycotoxins, pesticide residues in vegetable products*)	1	3,0
Spectroscopic methods of analysis (*pollutants (HM) in soils, fertilizers, vegetable products*)	2	3,0
Biological methods of analysis (*ecological and trophic groups of microorganisms in soils, total biological activity*)	2	4,0
Total		**10,0**
Optional disciplines chosen by students		
Laboratory research methods of soils, fertilizers and crop production	3	3,0
Quality management of soils, fertilizers and crop production	3	3,0
Diagnostics of soils (*soil morphology, abstract data base)*	3	2,5
Total		**8,5**

Proposed topics for masters' papers:

1. Development of new and optimization of existing methods for physical, chemical and biological analysis of soil properties.
2. Elaboration of standards for products and requirements for technological indices in the period of Ukraine's accession to WTO.
3. Coordination of international and national standards of soil quality.

Master programme

MICROBIOLOGICAL MONITORING OF SOILS (AHROCHEMIST-PEDOLOGIST-ANALYST)

Microbiological monitoring of soils is essential for regulating the number of beneficial soil microorganisms and determining the activity of microbiological processes in order to preserve soil fertility, environmental quality and sustainable yielding capacity.

Optional disciplines chosen by university	Semester	Credits
Laboratory methods for analysis of biological properties of soils (*microbial cenoses of different types of soil*)	1	4,0
Special soil microbiology	2	3,0
Biological methods of analysis (*ecological and trophic groups, total biological activity*)	2	3,0
Total		**10,0**
Optional disciplines chosen by students		
Current methods of laboratory diagnostics of microbial groups of soils	3	3,0
Microbial destruction of toxic chemicals in contaminated soils and evaluation methods	3	3,0
Strategies for improving symbiotic nitrogen fixation of soils	3	2,5
Total		**8,5**

Proposed topics for masters' papers:

1. Estimation of biological properties and remediation of anthropogenically disturbed soils.
2. Structure stability of microbial cenoses of major types of soils under different conditions of use.
3. Increased deposition of carbon by heterotrophic microorganisms of different types of soils to reduce greenhouse effect.

Master programme

RADIO-ECOLOGICAL MONITORING OF SOILS, FERTILIZERS AND CROP PRODUCTION (AGROCHEMIST-PEDOLOGIT-ANALYST)

Radio-ecological monitoring of soils, fertilizers and crop production is essential for protection and soil conservation and production of ecologically friendly products. Master programme aims to study up-to-date methods of measurement and evaluation of background radiation and gamma radiation monitoring in certain agricultural areas, determination of the level of radiocaesium and radiostrontium in the environment.

Optional disciplines chosen by university	Semester	Credits
Laboratory research methods	1	4,0
Special radiology (*soil, fertilizers, crop production*)	2	3,0
Dosimetry and radiometry of agricultural objects	2	3,0
Total		**10,0**
Optional disciplines chosen by students		
Current methods of monitoring of soils, fertilizers and crop production	3	3,0
Quality management of soils, fertilizers and crop production	3	3,0
Soil diagnostics	3	2,5
Total		**8,5**

Proposed topics for masters' papers:

1. Analysis of radiation situation of farmlands at training and research centres of NULES Ukraine.
2. Radiological evaluation of soil and fertilizer processing system impact on accumulation of radionuclides (by specific species of crops on a farm).
3. Comparative radiological evaluation of forage crops accumulation of radionuclides in natural and cultivated lands (on a farm).
4. Comparative radiological evaluation of crop production and fodder produced in TRC "Vorzel" and on private farms in the fourth zone of radioactive contamination.

SPECIALITY
8.130104 “PLANT PROTECTION”

Disciplines of master programme	Semester	Credits
Compulsory disciplines for all students of master course in NULES of Ukraine		
Business foreign language	1	1,5
Philosophy of science and innovative development	1	1,5
Strategy of sustainable development of nature and society	1	1,0
World agriculture and food resources	1	1,0
International standardization and certification of raw materials and finished products	1	1,0
Total		**6,0**
Compulsory disciplines according to the requirements of MES of Ukraine		
Economics and organization of the agricultural sector	1,2	2,0
Labour safety in plant protection	2	2,0
Marketing and management in plant protection	2	2,0
Agricultural and environmental law	2	2,0
Information technologies in entomology	1	2,0
Cultivation of beneficial insects	1	3,0
Epiphytotiology	1	3,0
Pesticide toxicology	2	3,0
Pathology of seed crops	2	2,0
Agricultural rodentology	1	3,0
Control of phytophagous insects numbers	2	5,0
Pathogen biology and management of plant diseases	2	5,0
Test methods of plant protection	2	5,0
Total		**39,0**
Optional disciplines chosen by university	3	**12,0**
Optional disciplines chosen by students	3	**9,0**
State attestation		
Practical training	1,2	12,0
Preparation and defense of master’s paper	3	12,0
Total		**24,0**
Total		**90,0**

RESEARCH SPECIALIZATION

Master programme

LABORATORY METHODS IN PLANT PROTECTION

The programme includes disciplines aimed at studying the peculiarities of metabolism of pathogenic organisms and pests in plant protection.

Optional disciplines chosen by university	Semester	Credits
Analytical methods of biochemistry of insects (*enzyme activity*)	2	2,0
Analytical methods of insect physiology research (*impact on hemolymph composition, activity of digestive enzymes*)	2	2,0
Microscopic research methods	2	2,0
Phytosanitary expertise	2	3,0
Basic instruments and laboratory research in plant protection	2,3	3,0
Total		**12,0**
Optional disciplines chosen by students		
Insect pathology	3	2,5
Technological processes in plant protection	3	2,5
Chromatographic methods of research (*aftereffect of pesticides on living organisms*)	3	2,0
Biochemical reactions in phytopathological processes	3	2,0
Total		**9,0**

Proposed topics for masters' papers:

1. Improved methods of detection and control the number of cyst formative nematodes.
2. Pests of fruit trees and eco-physiological control of their number in forest-steppe of Ukraine.
3. Pests of industrial crops and the impact of eco-physiological factors on the number of populations.
4. Pattern dynamics of pests depending on the influence of environmental factors.
5. Monitoring and ways of optimizing component diversity in the system of agrocoenosis unity.
6. Ways and methods of stimulating microorganisms in the system of environmentally-oriented farming.
7. Approbation of modern diagnostic methods of planting material for detection of viral diseases agents.

Master programme

MICROBIOLOGY AND VIROLOGY IN PLANT PROTECTION

The study of special microbiology will give an opportunity to deepen knowledge of the structure, functions and peculiarities of microorganism existence, including pathogenic to plants. In agrobiocaenosis it will help to solve environmental problems of rational use of products of microbial synthesis in plant protection. The programme includes modern methods of microscopic diagnosis of diseases of cultivated plants; methods of mycological analysis of plant products and antagonists of cultivated mushrooms.

Optional disciplines chosen by university	Semester	Credits
Methods for histological and histochemical research in plant protection (*structure of tissues, quantitative hemolymph parameters, fat body*)	2	3,0
Laboratory methods in microbiology (histology of affected plants, histochemistry of different compounds in affected plants)	2,3	3,0
Antagonists of cultivated mushrooms	2	3,0
Express-methods for evaluating plant resistance to diseases	3	3,0
Total		**12,0**
Optional disciplines chosen by students		
Microbiological preparations and research methods in plant protection	3	3,0
Research methods of pathogenic properties of micromycete (*biology of agents of fungal, bacterial, viral diseases*)	3	3,0
Phytotoxic properties of microbes (*effect of disease agents on physiological status of plants*)	3	3,0
Total		**9,0**

Proposed topics for masters' papers:

1. Evaluation of resistance of crops to diseases.
2. Diseases of cultivated mushrooms, their diagnostics and development control.
3. Antagonists of microorganisms, their identification and methods used against disease pathogens.
4. Study the effect of bacterial epiphyte on resistance of plants to diseases.
5. Influence of symbiotic nitrogen fixation of legume crops to increase their resistance to diseases.
6. Positive influence of microbiological preparations on functioning of mycorrhizal complex of plant root.

Master programme

ECOMORPHOLOGY AND PHYSIOLOGY OF INSECT PESTS OF AGRICULTURAL CROPS

The course substantiates knowledge of laws of development, reproduction, physiological changes of pests under current conditions, as well as evolution of species and population level under the influence of biotic components of agrobiocaenosis. The programme covers ecomorphological roots of pests adaptation to agricultural technologies and systems in different soil-climatic zones of Ukraine.

Optional disciplines chosen by university	Semester	Credits
Metabolism of insects	2	4,0
Biochemistry of insects	2	4,0
Immunity of pests of agricultural crops	2,3	4,0
Total		**12,0**
Optional disciplines chosen by students		
Dynamics of populations of insect pests in agrocenoses	3	3,0
Laboratory methods in entomology (*effect of various factors on fertility, growth, development*)	3	3,0
Ecomodels of prognosticating pest populations	3	3,0
Total		**9,0**

Proposed topics for masters' papers:

1. Mechanisms of codling moth development depending on the weight of larvae and chrysalises.
2. Ecomorphological background of Colorado beetle adaptation to survival in different soil and climatic conditions.
3. Effect of biotic components of agrobiocaenosis on the dynamics of quantity and reproduction of corn stem butterfly.

SPECIALITY
8.130401 “FORESTRY ”

Disciplines of master programme	Semester	Credits
Compulsory disciplines for all students of master course in NULES of Ukraine		
Forestry, land and environmental law	1	1,0
World forestry and forest resources	1	1,0
Strategy of sustainable development of nature and society	1	1,0
International standardization and certification of technologies, raw materials and finished products	1	1,0
Total		**4,0**
Compulsory disciplines according to the requirements of MES of Ukraine		
Business foreign language	1	1,5
Philosophy of science	1	1,5
Management psychology	3	1,5
Research methodology	3	1,5
Accounting in forestry	1	2,5
Management of forestry production	1	2,5
Planning of forestry production	1,2	6,0
Regulation of forest productivity	1	3,5
Labour safety in the sector	1	2,5
Forest Policy	2	2,5
Total		**25,5**
Optional disciplines chosen by university	2,3	**35,5**
Optional disciplines chosen by students	2	**6,0**
State attestation		
Practical training	1,2	10,0
Preparation and defense of master’s paper	3	9,0
Total		**19,0**
Total		**90,0**

PRODUCTION SPECIALIZATION

Master programme

INTEGRATED USE OF ORGANIC NON-WOOD FOREST PRODUCTS

The basis of this master programme is integrated approach to the use of non-wood forest resources. Series of course disciplines cover theoretical and practical aspects of using non-wood forest resources, methods of their restoration, up-to-date technologies, artificial cultivation of fruit trees, medicinal and fodder plants and mushrooms using foreign experience. Considerable attention is paid to the issues of standardization, certification and production of organic non-wood forest products.

Optional disciplines chosen by university	Semester	Credits
Theoretical principles of integrated use of organic non-wood forest products	2	5,0
Biochemistry of forest berries and mushrooms (*potentiometry, spectrophotometry, etc)*	2	5,0
Plantation growing of forest food and medicinal plants and mushrooms (*microclonal reproduction, chromosomal analysis of berry plants*)	3	4,5
Organic production of non-wood forest products	2	3,5
Standardization and certification of non-wood forest products	3	3,5
World production and marketing of non-wood forest products	2	3,5
Methods of evaluation and bioproductivity of non-wood forest products	2	3,5
Increased productivity and yield forecasting of forest berry plantations.	3	4,0
Storage and processing of non-wood forest products	3	3,0
Total		**35,5**
Optional disciplines chosen by students		
Biology and ecology of forest food and medicinal plants	2	4,0
Forestry beekeeping	3	2,0
Total		**6,0**
Total		**41,5**

Proposed topics for masters' papers:

1. Evaluation of the most important non-wood forest resources (berries, honey, medicinal and other plants), their rational and effective use.
2. Growing forest fruits, honey and medicinal plants and mushrooms on plantations.
3. Turpentining of birch tree plantations and their effective use.

RESEARCH SPECIALIZATION

Master programme

MICROORGANISMS IN THE SYSTEM UNITY OF FOREST BIOCENOSIS COMPONENTS

The programme includes series of disciplines dealing with microbial populations of forest biocenosis components, methods of their research and is aimed at training master students to understand the importance of this component in formation of biologically sustainable forest plantations. The programme includes priority study of microbiota in rhizosphere, philosphere, seeds, targeted saprotroph stimulation in woody plants, particularly in seeds.

Optional disciplines chosen by university	Semester	Credits
Theoretical prinsiples of microbiota regulation	2	5,0
Mycotrophia of forest woody plants	2	5,0
Bacteriosis of forest woody plants	2	4,0
Ecology and dynamics of disease agents in forest biocenoses	2	4,0
Virus and mycoplasmatic diseases of forest woody plants	3	5,0
Forestry nematology	3	5,0
Epiphyte and endophyte microflora of woody plants	3	5,0
Microorganisms of rhizosphere of forest woody plants	3	6,5
Total		**35,5**
Optional disciplines chosen by students		
Methods of experimental microbiology and virology (*microbiota in rhizosphere, philosphere, seeds; purposeful saprotroph stimulation in woody plants, seeds*)	2	3,0
Experimental mycology (*mycorrhizal mushrooms)*	2	3,0
Total		**6,0**
Total		**41,5**

Proposed topics for masters' papers:

1. Epiphyte (endophyte) microflora of scatheless parts of woody plants.
2. The state and ways to stimulate mycorrhizal macromycete in stand of trees (non-forest lands, seed plots, etc.)
3. Forestry and ecological role of rhizosphere microorganisms of forest woody plants.
4. Biological characteristics and pathogenesis of bacteriosis (vyrosis, vyroidosis, mycoplasmosis, nematode diseases) of forest biocenosis plants.

Master programme

ЗООСЕНОЗИС OF FOREST ECOSYSTEMS

The program includes series of disciplines aimed at training master students to understand zoocenosis functioning in the system unity of forest ecosystem components, its biocoenotic role and importance in enhancing forest biological sustainability and productivity. Particular attention is paid to methods of laboratory studies of vertebrates and invertebrates, spatial and trophic relations, epizooties in forest biocenosis, etc.

Optional disciplines chosen by university	Semester	Credits
Population ecology and ethology of vertebrate forest animals	2,3	5,0
Forest ornithology	2	4,5
Forest theriology	3	4,5
Monitoring of forest zoocenosis	2	4,5
Forestry ecological role of invertebrates	3	4,5
Consortial relationships of plants and animals in forest biocenosis	3	4,5
Epizooties in forest biocenosis	3	4,0
Preservation of vertebrate animals diversity in forest ecosystems	2	4,0
Total		**35,5**
Optional disciplines chosen by students		
Forest batrachoherpetology	2	3,0
Methods of forest zoological studies (*enclosure and semi-enclosure keeping, reacclimatization of bison and elk; restoring populations of grey hen, wood grouse, hazel-hen; bonitation of rodent lands (beaver), typological evaluation of ecological niche of forest birds, optimization of bats as typical entomophage and large wild animals (wolf and lynx))*	2	3,0
Total		**6,0**
Total		**41,5**

Proposed topics for masters' papers:

1. Monitoring of vertebrate (invertebrate) animals in the system unity of forest biocenosis components (specific types or groups of species).
2. Silvicultural and ecological coenotic principles of reproduction and protection of vertebrates (invertebrates) in forest ecosystems.

Master programme

MONITORING AND REGULATING THE QUANTITY OF ENTOMOFAUNA OF FOREST BIOCOENOSIS

The program includes series of disciplines dealing with forestry entomofauna, research methods and is aimed at training master students to understand the place and role of entomofauna in the system unity of forest biocenosis components. Particular attention is focused on mastering theoretical principles of forest ecological and biological role of forest entomofauna, prognostication of mass distribution of harmful insects populations, monitoring and regulation of their quantity.

Optional disciplines chosen by university	Semester	Credits
Monitoring and regulation of forest entomocomplex	2,3	6,0
Arthropods prognostication of forest biocenosis	3	5,5
Ecology of forest entomofauna	2	6,0
Phytophage of forest biocenosis	2,3	6,0
Theories of insects gradation of forest ecosystems	2,3	6,0
Biological methods of forest protection from harmful arthropods	2	6,0
Total		**35,5**
Optional disciplines chosen by students		
Methods of entomopathological studies (fruit damaging phytophages, the complex of dominant phytophagous lepidoptera (chestnut moth), soil-living phytophages (chafer, mole cricket), complex of suctorial phytophages; entomophages)	2	4,0
Technical harmful insects	3	2,0
Total		**6,0**
Total		**41,5**

Proposed topics for masters' papers:

1. Monitoring of forest biocenosis entomofauna (in specific conditions).
2. Forestry and ecological principles of regulating the quantity of needles and foliage pests (specific example).

Master programme

THEORETICAL PRINCIPLES OF ECOSYTEMIC APPROACH IN FORESTRY

The focus of this master programme is comprehensive ecological-economic approach to the study of forest ecosystems and development of ecologically balanced approach to planning and conducting forest operations. Series of disciplines cover theoretical and practical aspects of forest landscapes management on ecosystemic level. The programme will enable specialists to work in research and educational organizations, participate in international research projects.

Optional disciplines chosen by university	Semester	Credits
Forest ecology	2	5,0
World silvicultural systems	2	5,0
Scientific principles of forest typology	3	3,5
Natural regeneration of forest ecosystems	2	3,5
Management of forest landscapes	3	3,5
Systems analysis of forest groups	2	3,5
Use of *GIS technologies* for spatial analysis of forest ecosystems	2	3,5
Economic evaluation of forest ecosystems	3	4,0
Research technique of wood components of forest ecosystems *(Field Map)*	2	4,0
Total		**35,5**
Optional disciplines chosen by students		
Research technique of non-wood components of forest ecosystem *(GIS technologies)*	3	3,0
Forestry urboecology	3	3,0
Total		**6,0**
Total		**41,5**

Proposed topics for masters' papers:

1. Prospects of international forest management practice in forest ecosystems (case study: basic forestry enterprise).
2. Impact of silvicultural measures on spatial analysis of forest ecosystems.
3. State of natural regeneration of forest ecosystems and elaboration of ways of its improvement (case study: basic forestry enterprise).

MASTER PROGRAMMES
EDUCATIONAL AND SCIENTIFIC INSTITUTE
OF NATURAL SCIENCES AND THE HUMANITIES

Educational and scientific institute of natural sciences and the humanities conducts educational, scientific, innovation, teaching, training, industrial, information, consultative cultural and educative activities associated with obtaining higher education and qualification in the field of study “Pedagogical education”, “Specific categories” and specialities of these directions focused on responding to challenges of education and professional training of specialists according to their vocation, interests, skills and regulatory requirements in higher education.

Scientific, research and innovation activities are provided through organic unity of education content and programmes of scientific activity; fundamental and applied research and development aim to create and implement innovative, information and communication technologies and training techniques, to elaborate higher education standards, new textbooks which are based on latest advancements in science and technology, to develop new forms of scientific cooperation (including international) with agencies and organizations to solve complex scientific problems, to organize scientific, practical, scientific and training seminars, conferences, competitions, contests, scientific research, course papers, degree papers and other activities of participants of the educational process.

Faculty of Pedagogics provides administrative support of master programmes

Provides conditions for students to obtain higher pedagogical education, complies with government contract and agreements to train specialists with higher education, studies labor market demand and promotes employment of graduates; organizes and coordinates educational process, introduces innovative, interactive teaching methods, carries out scientific, research and innovation, cultural and educational activities, providing intellectual, moral, spiritual, aesthetic and physical development of students.

Peculiarities of educational process

Master programme provides advanced training on previously acquired speciality and a complex of psychological and pedagogical disciplines. Pedagogical education in this programme expands opportunities of master graduates for further employment at agricultural universities of I and II accreditation levels.

Masters-teachers study on various master programmes, including: teaching methods in a series of disciplines: veterinary, ecological, legal, social and educational, technology of production and processing of livestock products, fish farming and aquaculture, agrochemistry and soil science, plant growing and crop production processing, breeding and seed production, plant protection, agricultural mechanization, electrification and automation of agriculture, machinery design for AIC, forestry, park and gardening, land management, finance, economics, accounting, management of organizations.

Centers of practical training for Master students are:

"*Pedagogy of higher education*" – agricultural universities I and II accreditation level (vocational and technical schools, colleges), Scientific and Methodological Center for Agricultural Education MAP of Ukraine, Institute of Vocational Education of Academy of Pedagogical Sciences of Ukraine, etc.; "*Social Pedagogy*" - schools, homes, centers for children's education, care and juvenile service centres, social work and social security offices, employment centers, etc.

Specialities:

8.010105 – "Social Pedagogy";
8.000005 – "Pedagogy of higher education"

Master qualification in employment according to the state classifier of professions in Ukraine:

in speciality 8.010105 "Social Pedagogy" 2340 – social pedagogue;
in speciality 8.000005 "Pedagogy of higher education" 2310.2 –university teacher.

Employment of Master graduates in specialties:

8.010105 "Social Pedagogy" – schools, centers of children's education, cultural centers and art schools, social service and educational clubs, children's and public organizations, care and juvenile service centres, specialized children's establishments, government and social work centres, social protection and assistance centers, employment centers, education and preventive upbringing institutions, etc.

8.000005 "Pedagogy of higher education" – higher educational establishments of I-II accreditation levels.

SPECIALITY
8.010105 “SOCIAL PEDAGOGY”

Master programme of production specialization

Socio-educational activities in rural areas	TSC of pedagogical techniques and evaluation of education quality (educational building 6, room 301, tel. 257-22-10) Coordinator – candidate of pedagogical sciences, L.M. Omelchenko

Disciplines of master programme	Semester	Credits
Compulsory disciplines for all students of master course in NULES of Ukraine		
Philosophy of science and innovative development	1	1,5
Agricultural, land and environmental law	1	1,0
Business foreign language	1	1,5
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products	1	1,0
Strategy of sustainable development of nature and society	1	1,0
Total		**7,0**
Compulsory disciplines according to the requirements of MES of Ukraine		
Organization of activity of public and specialized services	1	3,0
Methodological principles of social and educational research	1	3,0
Current problems of social pedagogics	1	3,0
Social work in Ukraine	1	3,0
Social support of a family	2	3,0
Psychological- pedagogical therapy	2	3,5
Methods of teaching social and pedagogical disciplines	2,3	6,0
Pedagogy of higher education	2	5,0
Psychology of higher education	1	5,0
Organization of educational process management in higher educational institution	2	5,0
Labour safety in social and pedagogical sphere	3	3,0
Total		**42,5**
Optional disciplines chosen by university	2,3	**15,0**
Optional disciplines chosen by students	3	**7,5**
State attestation		
Practical training	2	7,0
Comprehensive state examination	3	1,0
Preparation and defense of master’s paper	3	10,0
Total		**18,0**
Total		**90,0**

PRODUCTION SPECIALIZATION

Optional disciplines chosen by university	Semester	Credits
New information technologies in higher education	3	5,0
Methods of social and pedagogical training	3	3,0
Culture of speech and business communication	2	3,0
Organization of work with various social groups	3	4,0
Total		**15,0**

Master programme

SOCIAL AND PEDAGOGICAL ACTIVITY IN RURAL AREAS

Explores theoretical and methodological principles of human socialization, cultural processes, peculiarities of education, educational opportunities of social environment and conditions of personality socialization inrural areas; substantiates forms and methods of social and educational work, elaborates innovative models and technologies of personal development in sociocultural context, cultural and recreational activity in rural society, develops social and pedagogical aspects of prevention of deviant behavior among children and adolescents in rural youth surroundings, etc.

Optional disciplines chosen by students	Semester	Credits
Economics of higher education	3	2,5
Management of social and educational work	3	2,5
Higher education in Ukraine and Bologna Process	3	2,5
Total		**7,5**

Proposed topics for masters' papers:

1. Technologies of antinarcogenic education in professional activities of a social educator.
2. Methods of interaction between a social teacher and representatives of different subcultures.
3. Social teacher's methods of prevention and correction of pedagogical conflicts in educational institutions.

SPECIALITY
8.000005 “PEDAGOGY OF HIGHER EDUCATION ”

MASTER PROGRAMMES OF PRODUCTION SPECIALIZATION

Teaching methods of disciplines course in fish farming and aquaculture	TSC of pedagogical techniques and evaluation of education quality (educational building 6, room 114, tel. 257-22-10) Coordinator – candidate of pedagogy, associate professor M.P. Homenko TSC of water bioresources (educational building 1, room 32, tel. 527-86-83) Coordinator – doctor of agriculture, prof. N.I.Vovk
Teaching methods of disciplines course in agricultural chemistry and soil science	TSC of pedagogical techniques and evaluation of education quality (educational building 6, room 114, tel. 257-22-10) Coordinator – candidate of pedagogy, associate prof. N.S.Zhuravs’ka MTSC of agrochemical service, quality and safety of crop production (educational building 2, room 30, tel. 527-88-17) Coordinator – candidate of agriculture, associate prof. I.V.Loginova MTSC of soil science, soil quality and conservation (educational building 2, room 13, tel. 527-81-02) Coordinator – doctor of agriculture, prof. V.O.Zabaluyev
Teaching methods of disciplines course in plant growing and crop production processing	TSC of pedagogical techniques and evaluation of education quality (educational building 6, room 114, tel. 257-22-10) Coordinator – candidate of pedagogy, associate prof. N.S.Zhuravs’ka MTSC of agricultural technologies, standardization and certification (educational building 7, room 5, tel 527-81-69) Coordinator – candidate of agriculture, associate prof. V.A.Mokriyenko

Teaching methods of disciplines course in plant protection	TSC of pedagogical techniques and evaluation of education quality (educational building 6, room 114, tel. 257-22-10) Coordinator – candidate of pedagogy, associate prof. N.S.Zhuravs'ka TSC of phytomedicine and phytosanitary in plant growing (educational building 4, room 42, tel. 527-85-77) Coordinator – doctor of biology, prof., academician of UAAS M.M. Kyryk
Teaching methods of ecological disciplines course	TSC of pedagogical techniques and evaluation of education quality (educational building 6, room , tel. 257-22-10) Coordinator – candidate of agriculture, associate prof. O.M.Nagorniuk TSC of ecological standardization and certification (educational building 17, room 214, tel. 527-81-72) Coordinator – doctor of agriculture, prof. V.M.Chaika
Teaching methods of veterinary disciplines course	TSC of pedagogical techniques and evaluation of education quality (educational building 6, room 114, tel. 257-22-10) Coordinator – candidate of pedagogy, associate prof. M.P.Khomenko TSC of veterinary medicine of productive animals (educational building 12, room 114, block.A, tel. 527-89-24) Coordinator – candidate of veterinary, associate prof. V.M.Lakatosh
Teaching methods of disciplines course in agricultural mechanization	TSC of pedagogical techniques and evaluation of education quality (educational building 6, room 114, tel. 257-22-10) Coordinator – candidate of pedagogy, associate prof. P.M.Reshetnyk MTSC of agricultural machinery, standardization and certification and service (educational building 11, room 346, tel. 527-89-24) Coordinator – candidate of engineering, associate prof. V.D.Voitiuk

Teaching methods of disciplines course in electrification and automation of agriculture	TSC of pedagogical techniques and evaluation of education quality (educational building 6, room 114, tel. 257-22-10) Coordinator –doctor of pedagogy, prof. P.G.Luzan MTSC of electrification and automation of enterprises (educational building 8, room 27a, tel. 527-85-22) Coordinator –doctor of engineering, prof. L.S.Chervinsky
Teaching methods of disciplines course in forestry	TSC of pedagogical techniques and evaluation of education quality (educational building 6, room 114, tel. 257-22-10) Coordinator – candidate of pedagogy, associate prof. N.S.Zhuravska TSC of forestry and expanded forest reproduction (educational building 1, room 91, tel. 527-82-82) Coordinator – candidate of biology, associate prof. S.V.Zibtsev
Teaching methods of disciplines course in landscape architecture	TSC of pedagogical techniques and evaluation of education quality (educational building 6, room 114, tel. 257-22-10) Coordinator – candidate of pedagogy, associate prof. N.S.Zhuravska TSC of landascape architecture and phytodesign (educational building 1a, room 15, tel. 527-82-62) Coordinator – doctor of agriculture, prof. N.O. Oleksiychenko
Teaching methods of disciplines course in land management	TSC of pedagogical techniques and evaluation of education quality (educational building 6, room 114, tel. 257-22-10) Coordinator – candidate of agriculture, associate prof. O.M.Nagorniuk MTSC of geoinformational technologies in AIC and environmental sector (educational building 6, room 132, tel. 257-93-87) Coordinator – candidate of agriculture, associate prof. S.S.Kohan

Teaching methods of legal disciplines course	TSC of pedagogical techniques and evaluation of education quality (educational building 6, room 114, tel. 257-22-10) Coordinator – candidate of pedagogy, associate prof. L.M.Bilan TSC of eurointegration of land, agricultural and environmental law of Ukraine (educational building 6, room 225, tel. 257-33-10) Coordinator – doctor of jurisprudence, prof. V.M.Yermolenko
Teaching methods of disciplines course in social pedagogy	TSC of pedagogical techniques and evaluation of education quality (educational building 6, room 303, tel. 257-22-10) Coordinator – candidate of pedagogy, L.M.Omelchenko
Teaching methods of disciplines course in economics of enterprise	TSC of pedagogical techniques and evaluation of education quality (educational building 6, room 303, tel. 257-22-10) Coordinator – candidate of pedagogy, associate prof. V.I.Svystun TSC of economics, accounting and finance (educational building 10, room 512, tel. 527-85-75) Coordinator – doctor of economics, prof. V.K.Zbarskyi
Teaching methods of disciplines course in accounting	TSC of pedagogical techniques and evaluation of education quality (educational building 6, room 303, tel. 257-22-10) Coordinator – candidate of pedagogy, associate prof. V.I.Svystun TSC of economics, accounting and finance (educational building 10, room 612, tel. 527-82-59) Coordinator – doctor of economics,, prof. Ye.V.Kaliuga
Teaching methods of disciplines course in management of organizations	TSC of pedagogical techniques and evaluation of education quality (educational building 6, room 303, tel. 257-22-10) Coordinator – doctor of pedagogy, associate prof. V.I.Svystun MTSC of agricultural management, marketing and quality management of agricultural products (educational building 10, room 315, tel. 527-85-66) Coordinator – doctor of economics, prof. V.P. Goriovyi

Teaching methods of disciplines course in technology production and processing of livestock products	TSC of pedagogical techniques and evaluation of education quality (educational building 6, room 114, tel. 257-22-10) Coordinator – candidate of pedagogy, associate prof. M.P.Khomenko MTSC of milk and meat cattle breeding (educational building 7, room 46, tel. 527-82-32) Coordinator – doctor of agriculture, prof. A.M.Ugnivenko MTSC of technologies in poultry growing, standardization and certification (educational building 7-a, room 215, tel. 527-88-49) Coordinator – doctor of agriculture, prof. V.P.Boroday
Teaching methods of disciplines course in selection and seed growing	TSC of pedagogical techniques and evaluation of education quality (educational building 6, room 114, tel.257-22-10) Coordinator – candidate of pedagogy, associate prof. N.S.Zhuravska MTSC of agrotechnologies, standardization and certification (educational building 7, room 5, tel. 527-81-69) Coordinator – candidate of agriculture, associate prof. V.A.Mokriyenko
Teaching methods of disciplines course in agricultural machinery design	TSC of pedagogical techniques and evaluation of education quality (educational building 6, кім. №114, тел. 257-22-10) Coordinator – candidate of pedagogy, associate prof. Ya.M.Rudyk MTSC of designing and reliability of machinery for agricultural, forestry and water economy and food technologies (educational building 11, room 349,tel. 527-87-34) Coordinator – doctor of engineering, prof. V.S.Loveikin
Teaching methods of disciplines course in finances	TSC of pedagogical techniques and evaluation of education quality (educational building 6, room 303, tel. 257-22-10) Coordinator – doctor of pedagogy, associate prof. V.I.Svystun TSC of economics, accounting and finance (educational building 10, room 603, tel. 527-85-50) Coordinator – doctor of economics, prof. V.P. Martynenko

Disciplines of master programme	Semester	Credits
Compulsory disciplines for all students of master course in NULES of Ukraine		
Business foreign language	1	1,5
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products	1	1,0
Strategy of sustainable development of nature and society	1	1,0
Total		**4,5**
Compulsory disciplines according to the requirements of MES of Ukraine		
Philosophical problems of scientific knowledge	1	1,5
Legal principles of scientific and pedagogical activities	1	1,0
Introduction to speciality	1	1,0
Pedagogy	1	5,0
Age and pedagogical psychology	1	3,0
Principles of scientific research in pedagogy	2	3,0
History of pedagogical science	1	3,0
Fundamentals of pedagogical skills	2	3,0
Theory and methods of professional training	2	4,0
Theory and methods of upbringing work	2	3,0
Social psychology	3	3,0
Pedagogical technologies	2	2,0
World experience and trends in higher education	2	1,0
Information technologies in education	2	3,0
Higher education in Ukraine and Bologna Process	3	2,0
Total		**38,5**
Optional disciplines chosen by university	1,2,3	**14,0**
Optional disciplines chosen by students	3	**12,0**
State attestation		
Practical training	2	11,0
Comprehensive state examination	3	1,0
Preparation and defense of master's paper	3	9,0
Total		**21,0**
Total		**90,0**

Master programme

TEACHING METHODS OF DISCIPLINES COURSE IN FISH FARMING AND AQUACULTURE

Explore historical aspects of theory and teaching methods of disciplines course in aquaculture and fishfarming: laws, principles, forms, methods and training means in "Fish farming and aquaculture", the content, system of control and assessment of learning outcomes, improvement, design and modeling disciplines content; theory and practical training methods, planning, organization of educational process in universities of I and II accreditation levels, theory and practice of upbringing, etc.

Optional disciplines chosen by university	Semester	Credits
Business foreign language	3	2,0
Psychological and pedagogical principles of interpersonal communication	3	2,0
Intensive technologies in aquaculture	1	2,0
Business organisation in fish farming	1	1,5
Theory of fish population dynamics	2	1,0
Theoretical principles of fish farming	2	1,5
World fisheries	3	2,0
Modeling of technological process in fish farming	3	2,0
Total		**14,0**
Optional disciplines chosen by students		
Rhetoric	3	2,0
Ethics of a university teacher	3	2,0
Psychology of creativity	3	2,0
Teaching methods of discipline "Fish farming"	3	2,0
Teaching methods of discipline "Organization of production in fish farming"	3	2,0
Teaching methods of discipline "Fish feeding"	3	2,0
Total		**12,0**

Proposed topics for masters' papers:

1. Methods of developing professional interests of future technologists in the process of studying discipline "Organization of fish farming production" at universities of I and II accreditation levels.
2. Methods of implementing interdisciplinary relationships in teaching disciplines "Aquaculture and fish farming" at universities of I and II accreditation levels.
3. Methodology of teaching discipline "Fish feeding" at universities of I and II accreditation levels.

Master programme

TEACHING METHODS OF DISCIPLINES COURSE IN AGROCHEMISTRY AND SOIL SCIENCE

Explore historical aspects of theory and teaching methods of disciplines course in soil science and agricultural chemistry; laws, principles, forms, methods and training means in “Agricultural chemistry and soil science”, the contents, system of control and assessment of learning outcomes, improvement, design and modeling of disciplines content; planning, organization of educational process at universities of I and II accreditation levels, theory and practical training methods, etc.

Optional disciplines chosen by university	Semester	Credits
Business foreign language	3	2,0
Psychological and pedagogical principles of interpersonal communication	3	2,0
Environmental chemistry	1	2,0
Agrochemical service	1	1,5
Management of processes in soil	2	1,0
Protection and restoration of soil fertility	2	1,5
Quality, standardization and certification of products and soils	3	2,0
Monitoring of soil quality	3	2,0
Total		**14,0**
Optional disciplines chosen by students		
Rhetoric	3	2,0
Ethics of a university teacher	3	2,0
Psychology of creativity	3	2,0
Teaching methods of discipline “Soil science”	3	2,0
Teaching methods of discipline “Agrochemical service”	3	2,0
Teaching methods of discipline “ Technology and fertilizers application system ”	3	2,0
Total		**12,0**

Proposed topics for masters’ papers:

1. Methodological aspects of using credit-modular system of training students in discipline "Agrochemistry" at universities of I and II accreditation levels.
2. Methodological aspects of evaluation students’ knowledge and skills in discipline “Protection and restoration of soil fertility” at universities of I and II accreditation levels.
3. Methodological aspects of students' self-study indiscipline “Technology and fertilizers application system” at universities of I and II accreditation levels.

Master programme

TEACHING METHODS OF DISCIPLINES COURSE IN PLANT GROWING AND CROP PRODUCTION PROCESSING

Explore historical aspects of theory and methodology of training disciplines course in “Plant growing and crop production processing”; laws, principles, forms, methods and training means in disciplines, their contents, system of control and assessment of learning outcomes, improvement, design and modeling of disciplines content, planning, organization of educational process at universities of I and II accreditation levels, theory and practical training methods, etc.

Optional disciplines chosen by university	Semester	Credits
Business foreign language	3	2,0
Psychological and pedagogical principles of interpersonal communication	3	2,0
World agrotechnologies	1	2,0
Biotechnologies in plant growing	1	1,5
Biological fundamentals of plant growing	2	1,0
Current problems in agroecology	2	1,5
Seed growing and seed science	3	2,0
Up-to-date technologies of forage crops growing and forage harvesting	3	2,0
Total		**14,0**
Optional disciplines chosen by students		
Rhetoric	3	2,0
Ethics of a university teacher	3	2,0
Psychology of creativity	3	2,0
Teaching methods of discipline “ Forage production”	3	2,0
Teaching methods of discipline “Technology of agricultural products processing and storage”	3	2,0
Teaching methods of discipline “World agrotechnologies”	3	2,0
Total		**12,0**

Proposed topics for masters’ papers:

1. Methodology of personality-oriented teaching of discipline “Technology of crop production at universities of I and II accreditation levels.
2. Methodological aspects of intensification of educational and cognitive activity of students in discipline “Technology of agricultural products processing and storage” at universities of I and II accreditation levels.
3. Methodological aspects of evaluation knowledge and skills of students in discipline “Adaptive farming systems” at universities of I and II accreditation levels.

Master programme

TEACHING METHODS OF DISCIPLINES COURSE IN PLANT PROTECTION

Explore the historical aspects of theory and teaching methods of disciplines course in plant protection; laws, principles, forms, methods and means of training in discipline “Plant protection”, its content, system of control and assessment of learning outcomes, improvement, design and modeling of course contents; planning, organization of educational process at universities of I and II accreditation levels; theory and practical training methods, etc.

Optional disciplines chosen by university	Semester	Credits
Business foreign language	3	2,0
Psychological and pedagogical principles of interpersonal communication	3	2,0
Information technologies in entomology	1	2,0
Agricultural rodentology	1	1,5
Marketing and management in plant protection	2	1,0
Pathology of seed crops	2	1,5
Technology of cultivation beneficial insects	3	2,0
Pathogen biology and management of plant diseases	3	2,0
Total		**14,0**
Optional disciplines chosen by students		
Rhetoric	3	2,0
Ethics of a university teacher	3	2,0
Psychology of creativity	3	2,0
Training methods of discipline"Test methods of plant protection products"	3	2,0
Teaching methods of discipline “Epiphytotiology”	3	2,0
Teaching methods of discipline “Labour safety in plant protection”	3	2,0
Total		**12,0**

Proposed topics for masters’ papers:

1. Methods of implementing interdisciplinary relationships in training students in discipline “Plant protection” at universities of I and II accreditation levels.
2. Method of developing professional interests of future specialists in the process of studying discipline ”Pathogen biology and plant diseases management” at universities of I and II accreditation levels.
3. Methodology of personality-oriented teaching of discipline “Labour safety in plant protection” at universities of I and II accreditation levels.

Master programme

TEACHING METHODS OF ECOLOGICAL DISCIPLINES COURSE

Explore historical aspects of theory and teaching methods of environmental disciplines, laws, principles, forms, methods and teaching means in environmental disciplines, their contents, system of control and assessment of learning outcomes, improvement, design and modeling of ecological sciences, planning, organizing educational process at universities of I and II accreditation levels, theory and practical training methods, etc.

Optional disciplines chosen by university	Semester	Credits
Business foreign language	3	2,0
Psychological and pedagogical principles of interpersonal communication	3	2,0
Agroecological monitoring and ecological expertise in agriculture	1	2,0
Environmental policy	1	1,5
Ecological standardization and certification	2	1,0
Problems of ecological safety and current concepts nature management	2	1,5
Environmental management and auditing	3	2,0
Environmental management in agriculture	3	2,0
Total		**14,0**
Optional disciplines chosen by students		
Rhetoric	3	2,0
Ethics of a university teacher	3	2,0
Psychology of creativity	3	2,0
Teaching methods of discipline “Principles of General Ecology”	3	2,0
Teaching methods of discipline “Environmental Monitoring”	3	2,0
Teaching methods of discipline “Rational nature management and environment protection”	3	2,0
Total		**12,0**

Proposed topics for masters’ papers:

1. Methodological aspects of developing professional competence of future environmental specialists in discipline “Principles of general ecology” at universities of I and II accreditation levels.
2. Methodological aspects of control students’ knowledge and skills in discipline “Environmental monitoring” at universities of I and II accreditation levels.
3. Methodological aspects of organization students’ self-study in discipline “Environmental standardization and certification” at universities of I and II accreditation levels.

Master programme

TEACHING METHODS OF VETERINARY DISCIPLINES COURSE

Explore historical aspects of theory and teaching methods of veterinary disciplines; laws, principles, forms, methods and training means of veterinary disciplines, their contents, system of control and assessment of learning outcomes, improvement, design and modeling of veterinary sciences content, planning, organization of educational process at universities of I and II accreditation levels, theory and practical training methods, etc.

Optional disciplines chosen by university	Semester	Credits
Business foreign language	3	2,0
Psychological and pedagogical principles of interpersonal communication	3	2,0
Veterinary-sanitary expertise and fundamentals of livestock technology and standardization of livestock products	1	2,0
Clinical pharmacology	1	1,5
Management and marketing in veterinary medicine	2	1,0
Pathological anatomy and forensic veterinary	2	1,5
Non-contagious animal diseases	3	2,0
Infectious animal diseases	3	2,0
Total		**14,0**
Optional disciplines chosen by students		
Rhetoric	3	2,0
Ethics of a university teacher	3	2,0
Psychology of creativity	3	2,0
Teaching methods of discipline “Internal animal diseases”	3	2,0
Teaching methods of discipline “Obstetrics ”	3	2,0
Teaching methods of discipline „ Parasitology”	3	2,0
Total		**12,0**

Proposed topics for masters’ papers:

1. Methodological aspects of using credit-modular system of training students in discipline “Pharmacology” at universities of I and II accreditation levels.
2. Methodological aspects of evaluation of students’ knowledge and skills in discipline “Veterinary and sanitary expertise” at universities of I and II accreditation levels.
3. Methodological aspects of organization self-study in discipline “Animal Physiology” at universities of I and II accreditation levels.

Master programme

TEACHING METHODS OF DISCIPLINES COURSE IN MECHANIZATION OF AGRICULTURE

Explore historical aspects of theory and teaching methods of disciplines course in “Mechanization of agriculture”; laws, principles, forms, methods and training means in agricultural mechanization, their contents, system of control and assessment of learning outcomes, improvement, design and modeling of disciplines content; planning, organization of educational process at universities of I and II accreditation levels: theory and practical training methods, etc.

Optional disciplines chosen by university	Semester	Credits
Business foreign language	3	2,0
Psychological and pedagogical principles of interpersonal communication	3	2,0
Transportation process in agriculture	1	2,0
Machinery maintanence	1	1,5
Reliability of technological systems	2	1,0
Modeling of technological processes and systems	2	1,5
Machine use in plant growing	3	2,0
Maintenance of machines for plant growing	3	2,0
Total		**14,0**
Optional disciplines chosen by students		
Rhetoric	3	2,0
Ethics of a university teacher	3	2,0
Psychology of creativity	3	2,0
Teaching methods of discipline “Machine use in agriculture“	3	2,0
Teaching methods of discipline „Tractors and automobiles“	3	2,0
Teaching methods of discipline “Mechanization of livestock production”	3	2,0
Total		**12,0**

Proposed topics for masters’ papers:

1. Methodological aspects of using visual aids in training students in discipline “Maintanence of agricultural equipment” at universities of I and II accreditation levels.
2. Methods of using disciplinaries intercourse in teaching technical disciplines at universities of I and II accreditation levels
3. Methodological aspects of organization students’ self-study in discipline “Tractors and automobiles” at universities of I and II accreditation levels.

Master programme

TEACHING METHODS OF DISCIPLINES COURSE IN ELECTRIFICATION AND AUTOMATION OF AGRICULTURE

Explore historical aspects of theory and teaching methods of disciplines course in “Electrification and automation of agriculture”; laws, principles, forms, methods and training means of discipline; their content, system of control and assessment of learning outcomes, improvement, design and modeling of disciplines content in ‘Electrification and automation of agriculture”; planning, organization of educational process at universities of I and II accreditation levels, theory and practical training methods,etc.

Optional disciplines chosen by university	Semester	Credits
Business foreign language	3	2,0
Psychological and pedagogical principles of interpersonal communication	3	2,0
Electric drive of agricultural vehicles, machinery and production line	1	2,0
Electrotechnologies in agriculture	1	1,5
Computer-integrated technologies for electrification and automation in agriculture	2	1,0
Electricity supply in agriculture	2	1,5
Designing of electrification and automation systems in agriculture	3	2,0
Operation of electrical equipment and automation facilities	3	2,0
Total		**14,0**
Optional disciplines chosen by students		
Rhetoric	3	2,0
Ethics of a university teacher	3	2,0
Psychology of creativity	3	2,0
Teaching methods of discipline “Theoretical principles of electrical engineering”	3	2,0
Teaching methods of discipline “Fundamentals of automation”	3	2,0
Teaching methods of discipline “Constructional and electrotechnical materials”	3	2,0
Total		**12,0**

Proposed topics for masters’ papers:

1. Methodological aspects of using credit-modular system of training students in discipline “Electric drive of agricultural vehicles, machinery and production line” at universities of I and II accreditation levels.
2. Methodological aspects of intensification of educational and cognitive activities of students in discipline “Electricity supply in agriculture” at universities of I and II accreditation levels.
3. Methodological aspects of students’ self-study in discipline “Operation of electrical equipment and automation facilities” at universities of I and II accreditation levels

Master programme

TEACHING METHODS OF DISCIPLINES COURSE IN FORESTRY

Explore historical aspects of theory and teaching methods of disciplines course in forestry; laws, principles, forms, methods and training means in “Forestry”; their contents, system of control and assessment of learning outcomes; improvement, design and modeling of disciplines content; planning, organization of educational process at universities of I and II accreditation levels, theory and practical training methods, etc.

Optional disciplines chosen by university	Semester	Credits
Business foreign language	3	2,0
Psychological and pedagogical principles of interpersonal communication	3	2,0
Forest policy	1	2,0
Planning forestry production	1	1,5
Timber	2	1,0
Forest roads and transport	2	1,5
Industrial methods of forest cultivation	3	2,0
Forest production gain using forestry practices	3	2,0
Total		**14,0**
Optional disciplines chosen by students		
Rhetoric	3	2,0
Ethics of a university teacher	3	2,0
Psychology of creativity	3	2,0
Teaching methods of discipline “Forestry”	3	2,0
Teaching methods of discipline “Silviculture and forest improvement“	3	2,0
Teaching methods of discipline “Forest protection“	3	2,0
Total		**12,0**

Proposed topics for masters’ papers:

1. Methodological aspects of evaluation students’ knowledge and skills in discipline “Planning forestry production” at universities of I and II accreditation levels.
2. Methodological aspects of using credit-modular system of training students in discipline “Industrial methods of forest cultivation” at universities of I and II accreditation levels.
3. Methodological aspects of organization students’ self-study in discipline “Forest production gain using forestry practices” at universities of I and II accreditation levels.

Master programme

TEACHING METHODS OF DISCIPLINES COURSE IN LANDSCAPE ARCHITECTURE

Explore historical aspects of theory and teaching methods of disciplines course in “Landscape Architecture”; laws, principles, forms, methods and training means of disciplines course; their content, system of control and assessment of learning outcomes; improvement, design and modeling of disciplines content; planning and organization of educational process at universities of I and II accreditation levels, theory and practical training methods, etc.

Optional disciplines chosen by university	Semester	Credits
Business foreign language	3	2,0
Psychological and pedagogical principles of interpersonal communication	3	2,0
Landscape gardening	1	2,0
Dendrite design	1	1,5
Phytodesign of closed environment	2	1,0
Reconstruction and restoration of garden and park facilities	2	1,5
Operation of garden and park facilities	3	2,0
Forest and park management	3	2,0
Total		**14,0**
Optional disciplines chosen by students		
Rhetoric	3	2,0
Ethics of a university teacher	3	2,0
Psychology of creativity	3	2,0
Teaching methods of discipline “Designing green sites construction”	3	2,0
Teaching methods of discipline “Landscape Architecture”	3	2,0
Teaching methods of discipline “Landscape design”	3	2,0
Total		**12,0**

Proposed topics for masters’ papers:

1. Methodological aspects of using credit-modular system of training students in discipline “Dendrite design” at universities of I and II accreditation levels.
2. Methodological aspects of intensification of educational and cognitive activities of students in studying discipline “Reconstruction and restoration of garden and park facilities” at universities of I and II accreditation levels.
3. Methodological aspects of students’ self-study in discipline “Landscape gardening” at universities of I and II accreditation levels.

Master programme

TEACHING METHODS OF DISCIPLINES COURSE IN LAND MANAGEMENT

Explore historical aspects of theory and teaching methods of disciplines course in “Land management”; laws, principles, forms, methods and means of disciplines course “Land management”; their contents, system of control and assessment of learning outcomes; improvement, design and modeling of disciplines content; planning, organization of educational process at universities of I and II accreditation levels; theory and practical training methods, etc.

Optional disciplines chosen by university	Semester	Credits
Business foreign language	3	2,0
Psychological and pedagogical principles of interpersonal communication	3	2,0
Management of land resources	1	2,0
Monitoring and land protection	1	1,5
Land management expertise	2	1,0
Design engineering	2	1,5
GIS in cadastral systems	3	2,0
Organization of land operations	3	2,0
Total		**14,0**
Optional disciplines chosen by students		
Rhetoric	3	2,0
Ethics of a university teacher	3	2,0
Psychology of creativity	3	2,0
Teaching methods of discipline “Land Cadastre”	3	2,0
Teaching methods of discipline “Geodesy”	3	2,0
Teaching methods of discipline “Regulation of land relations”	3	2,0
Total		**12,0**

Proposed topics for masters’ papers:

1. Methodological aspects of using credit-modular system of training students in discipline “Management of land resources” at universities of I and II accreditation levels
2. Methodological aspects of intensification of educational and cognitive activities of students in studying discipline “Organization of land operations” at universities of I and II accreditation levels.
3. Methodological aspects of students' self-study in discipline "Monitoring and land protection" at universities of I and II accreditation levels.

Master programme

TEACHING METHODS OF LEGAL DISCIPLINES COURSE

Explore historical aspects of theory and teaching methods of legal disciplines course; laws, principles, forms, methods and means of legal disciplines, their contents, system of control and assessment of learning outcomes; improvement, design and modeling of disciplines content; planning, organization of training and educational process at universities of I and II accreditation levels, theory and practical training methods, etc.

Optional disciplines chosen by university	Semester	Credits
Business foreign language	3	2,0
Psychological and pedagogical principles of interpersonal communication	3	2,0
Issues of environmental law	1	2,0
Theoretical issues of civil law	1	1,5
Current issues of administrative law	2	1,0
Current issues of land law	2	1,5
Theoretical issues of agricultural law	3	2,0
Legal support of quality and product safety in agriculture	3	2,0
Total		**14,0**
Optional disciplines chosen by students		
Rhetoric	3	2,0
Ethics of a university teacher	3	2,0
Psychology of creativity	3	2,0
Teaching methods of discipline „Law science”	3	2,0
Teaching methods of discipline “History of state and law of Ukraine ”	3	2,0
Teaching methods of discipline “Constitutional Law of Ukraine”	3	2,0
Total		**12,0**

Proposed topics for masters’ papers:

1. Methodological aspects of using credit-modular system of training students in discipline “Legal support of quality and safety of agricultural products” at universities of I and II accreditation levels.
2. Methodological aspects of intensification of educational and cognitive activities of students in studying discipline “Law science” at universities of I and II accreditation levels.
3. Methodological aspects of students self-study in discipline “Constitutional Law of Ukraine” at universities of I and II accreditation levels.

Master programme

TEACHING METHODS OF SOCIO-PEDAGOGICAL DISCIPLINES COURSE

Explore historical aspects of theory and teaching methods of social and pedagogical disciplines; laws, principles, forms, methods and means of social and pedagogical disciplines course, their contents, system of control and assessment of learning outcomes; improvement, design and modeling of social and pedagogical disciplines content; planning, organization of educational process at universities of I and II accreditation levels, theory and practical training methods, etc.

Optional disciplines chosen by university	Semester	Credits
Business foreign language	3	2,0
Psychological and pedagogical principles of interpersonal communication	3	2,0
Organization of social services operation	1	2,0
Methods of carrying out socio-pedagogical training	1	1,5
Social support of a family	2	1,0
Psychological and pedagogical therapy	2	1,5
Social activities in Ukraine	3	2,0
Organization of work with various social groups	3	2,0
Total		**14,0**
Optional disciplines chosen by students		
Rhetoric	3	2,0
Ethics of a university teacher	3	2,0
Psychology of creativity	3	2,0
Teaching methods of discipline “Social pedagogy“	3	2,0
Teaching methods of discipline “General Pedagogy	3	2,0
Teaching methods of discipline „ Technologies of socio-pedagogical activities”	3	2,0
Total		**12,0**

Proposed topics for masters’ papers:

Methods of developing tolerance of future social workers in studying discipline “Psychological and pedagogical therapy” at universities of I and II accreditation levels.

Methodology of developing social competence of students at universities of I and II accreditation levels in studying discipline “Social Psychology”.

Methodological principles of developing professional readiness of future social studies teacher in studying discipline “Organization of various social groups operation”.

Master programme

TEACHING METHODS OF DISCIPLINES COURSE IN ECONOMICS OF ENTERPRISE

Explore historical aspects of theory and teaching methods of disciplines course in economics of enterprise; laws, principles, forms, methods and means of training in enterprise economics; their contents, system of control and assessment of learning outcomes; improvement, design and modeling of disciplines content; planning, organization of educational process at universities of I and II accreditation levels; theory and practical training methods, etc.

Optional disciplines chosen by university	Semester	Credits
Business foreign language	3	2,0
Psychological and pedagogical principles of interpersonal communication	3	2,0
Financial management	1	2,0
International management	1	1,5
Strategic management of enterprise	2	1,0
Project management	2	1,5
Management of enterprise potential	3	2,0
Economic diagnostics	3	2,0
Total		**14,0**
Optional disciplines chosen by students		
Rhetoric	3	2,0
Ethics of a university teacher	3	2,0
Psychology of creativity	3	2,0
Teaching methods of discipline „Economics of enterprise”	3	2,0
Teaching methods of discipline “Finances of enterprise“	3	2,0
Teaching methods of discipline “Accounting system“	3	2,0
Total		**12,0**

Proposed topics for masters' papers:

1. Developing creative potential of students' economic skills in solving business problems.
2. Methodological aspects of using credit-modular system of training students in discipline “Management of enterprise potential” at universities of I and II accreditation levels.
3. Methodological aspects of training future economists in discipline “Economic diagnostics” using information technologies.

Master programme

TEACHING METHODS OF DISCIPLINES COURSE IN ACCOUNTING

Explore historical aspects of theory and teaching methods of disciplines course in accounting; laws, principles, forms, methods and means of training disciplines course in accounting; their content, system of control and assessment of learning outcomes; improvement, design and modeling disciplines content; planning, organization of educational process at universities of I and II accreditation levels; theory and practical training methods, etc.

Optional disciplines chosen by university	Semester	Credits
Business foreign language	3	2,0
Psychological and pedagogical principles of interpersonal communication	3	2,0
Accounting for budget organizations and institutions	1	2,0
Accounting for Foreign Economic Activity	1	1,5
Management information systems in analysis and audit	2	1,0
Models and methods of decision making in auditing	2	1,5
Analysis of estimates in budget organizations	3	2,0
Financial analysis	3	2,0
Total		**14,0**
Optional disciplines chosen by students		
Rhetoric	3	2,0
Ethics of a university teacher	3	2,0
Psychology of creativity	3	2,0
Teaching methods of discipline “Accounting”	3	2,0
Teaching methods of discipline “Information systems and technologies in accounting“	3	2,0
Teaching methods of discipline “Control and revision“	3	2,0
Total		**12,0**

Proposed topics for masters’ papers:

1. Methodological aspects of using visual aids in training students in discipline “Accounting” at universities of I and II accreditation levels.
2. Methodological aspects of teaching future accountants in discipline “Accounting for budget organizations and institutions” using information technologies.
3. Methodological aspects of organisation students’ self-study in discipline “Models and methods of decision making in auditing” at universities of I and II accreditation levels.

TEACHING METHODS OF DISCIPLINES COURSE IN MANAGEMENT OF ORGANIZATIONS

Explore historical aspects of theory and teaching methods of disciplines course in “Management of organizations”; laws, principles, forms, methods and means of training in disciplines course “Management of organizations”; their content, system of control and assessment of learning outcomes, improvement, design and modeling disciplines content; planning, organization of educational process at universities of I and II accreditation levels; theory and practical training methods, etc.

Optional disciplines chosen by university	Semester	Credits
Business foreign language	3	2,0
Psychological and pedagogical principles of interpersonal communication	3	2,0
Investment management	1	2,0
Innovation management	1	1,5
Strategic management	2	1,0
Financial management	2	1,5
Corporate management	3	2,0
Management og organizations	3	2,0
Total		**14,0**
Optional disciplines chosen by students		
Rhetoric	3	2,0
Ethics of a university teacher	3	2,0
Psychology of creativity	3	2,0
Teaching methods of discipline “Management”	3	2,0
Teaching methods of discipline “Marketing“	3	2,0
Teaching methods of discipline “Corporate management“	3	2,0
Total		**12,0**

Proposed topics for masters’ papers:

1. Methods of developing creative autonomy of future managers in training discipline “Strategic Management” at universities of I and II accreditation levels.
2. Methodological peculiarities of interactive teaching methods in training students of agricultural universities of I and II accreditation levels for management activities.
3. Development of managerial skills of future agricultural experts in teaching discipline “Corporate management” at universities of I and II accreditation levels.

Master programme

TEACHING METHODS OF DISCIPLINES COURSE IN TECHNOLOGY OF PRODUCTION AND PROCESSING OF LIVESTOCK PRODUCTS

Explore historical aspects of theory and methodology of training disciplines course in "Technology of production and processing of livestock products"; laws, principles, forms, methods and means of training disciplines course in technology of production and processing of livestock products; their contents, system of control and assessment of learning outcomes; theory and methodology of practical training; planning, organization of educational process at universities of I and II accreditation levels; theory and practice of upbringing, etc.

Optional disciplines chosen by university	Semester	Credits
Business foreign language	3	2,0
Psychological and pedagogical principles of interpersonal communication	3	2,0
Biology of farm animals productivity	1	2,0
Technology of production of milk and milk products	1	1,5
Technology of meat and meat products	2	1,0
Modeling technological processes in livestock	2	1,5
Technology of fodder and fodder additives production	3	2,0
Organization of pedigree stock-breeding	3	2,0
Total		**14,0**
Optional disciplines chosen by students		
Rhetoric	3	2,0
Ethics of a university teacher	3	2,0
Psychology of creativity	3	2,0
Teaching methods of discipline "Farm animals feeding"	3	2,0
Teaching methods of discipline " Technology of poultry production"	3	2,0
Teaching methods of discipline "Technology of sheep breeding production"	3	2,0
Total		**12,0**

Proposed topics for masters' papers:

1. Methodology of teaching discipline "Technology of poultry production" at universities of I and II accreditation levels.
2. Method of developing creative autonomy of future technologists in teaching discipline "Technology of production of milk and milk products" at universities of I and II accreditation levels.
3. Intensification of cognitive activity of students of technological specialties in teaching discipline "Modeling of technological processes in livestock production" at universities of I and II accreditation levels.

Master programme

TEACHING METHODS OF DISCIPLINES COURSE IN SELECTION AND SEED GROWING

Explore historical aspects of theory and teaching methods of disciplines course in "Selection and seed growing"; laws, principles, forms, methods and means of training in disciplines course in selection and seed growing, their contents, system of control and assessment of learning outcomes; improvement, design and modeling of disciplines content, organization of educational process at universities of I and II accreditation levels, theory and practical training methods, etc.

Optional disciplines chosen by university	Semester	Credits
Business foreign language	3	2,0
Psychological and pedagogical principles of interpersonal communication	3	2,0
Current methods of selection and genetic research	1	2,0
Special crop genetics	1	1,5
Special selection and seed growing of field crops	2	1,0
Ecological and adaptive selection	2	1,5
Selection of fruit, berries and vegetables	3	2,0
Genetic engineering and biotechnologies	3	2,0
Total		**14,0**
Optional disciplines chosen by students		
Rhetoric	3	2,0
Ethics of a university teacher	3	2,0
Psychology of creativity	3	2,0
Teaching methods of discipline "Special crop genetics"	3	2,0
Teaching methods of discipline " Special selection and seed growing of field crops"	3	2,0
Teaching methods of discipline "Plant genetic resources"	3	2,0
Total		**12,0**

Proposed topics for masters' papers:

1. Methodological aspects of using credit-modular system of training students in discipline "Ecological and adaptive selection" at universities of I and II accreditation levels
2. Didactic principles of using multimedia technologies in training students in discipline "Selection of fruit, berry and vegetable crops" at universities of I and II accreditation levels.
3. Methodological aspects of organization self-study of students in discipline "Seed growing" at universities of I and II accreditation levels.

Master programme

TEACHING METHODS OF DISCIPLINES COURSE IN DESIGN OF AGRICULTURAL MACHINERY

Explore historical aspects of theory and teaching methods of disciplines course in “Design of agricultural machinery”; laws, principles, forms, methods and means of training in designing agricultural machinery; their contents, system of control and assessment of learning outcomes; improvement, design and modeling of disciplines content; planning, organization of educational process at universities of I and II accreditation levels; theory and practical training methods, etc.

Optional disciplines chosen by university	Semester	Credits
Business foreign language	3	2,0
Psychological and pedagogical principles of interpersonal communication	3	2,0
Modeling of technological processes and systems	1	2,0
Theory of design and calculation of agricultural machinery	1	1,5
Measuring equipment and measurement techniques	2	1,0
Designing enterprises for technical services	2	1,5
Reliability of agricultural machinery	3	2,0
Testing and certification of agricultural machinery	3	2,0
Total		**14,0**
Optional disciplines chosen by students		
Rhetoric	3	2,0
Ethics of a university teacher	3	2,0
Psychology of creativity	3	2,0
Teaching methods of discipline “Mechanization and automation of manufacturing processes in mechanical engineering”	3	2,0
Teaching methods of discipline “Fundamentals of materials and tool processing”	3	2,0
Teaching methods of discipline „Technological equipment of foundry, metalforming machines lines and hardening plants“	3	2,0
Total		**12,0**

Proposed topics for masters’ papers:

1. Methodological aspects of using credit-modular system of training students in discipline “Measuring equipment and measurement techniques” at universities of I and II accreditation levels
2. Methodological aspects of evaluation of students’ knowledge and skills in discipline “Reliability of agricultural equipment” at universities of I and II accreditation levels
3. Methodological aspects of organization self-study in discipline “Theory of designing and calculation of agricultural equipment” at universities of I and II accreditation levels.

Master programme

TEACHING METHODS OF DISCIPLINES COURSE IN FINANCES

Explore historical aspects of theory and teaching methods of disciplines course in finance; laws, principles, forms, methods and means of training in finance; their contents, system of control and assessment of learning outcomes, improvement, design and modeling of disciplines content; planning, organization of educational process at universities of I and II accreditation levels, theory and practical training methods, etc.

Optional disciplines chosen by university	Semester	Credits
Business foreign language	3	2,0
Psychological and pedagogical principles of interpersonal communication	3	2,0
Financial management	1	2,0
Financial Services Market	1	1,5
Management of financial reorganization of an enterprise	2	1,0
Mortgage lending	2	1,5
Stock market	3	2,0
Analysis of investment projects	3	2,0
Total		**14,0**
Optional disciplines chosen by students		
Rhetoric	3	2,0
Ethics of a university teacher	3	2,0
Psychology of creativity	3	2,0
Teaching methods of discipline “Finances”	3	2,0
Teaching methods of discipline „ Money and credit”	3	2,0
Teaching methods of discipline “Finances of enterprise”	3	2,0
Total		**12,0**

Proposed topics for masters’ papers:

1. Methods of developing professional thinking of financial experts in training discipline “Financial Management” at universities of I and II accreditation levels.
2. Methodological aspects of developing professional competence of future financial experts in discipline “Money and Credit” at universities of I and II accreditation levels.
3. Methodological aspects of organization self-study in training students in discipline “Financial Services Market” at universities of I and II accreditation levels.

MASTER DEGREE PROGRAMMES OF EDUCATIONAL AND SCIENTIFIC INSTITUTE OF POSTGRADUATE EDUCATION

Educational and scientific Institute of Postgraduate Education carries out educational, scientific-research, innovative, practical and methodological training, information consulting, cultural and educative activities connected with obtaining higher education and acquiring Master degree and qualification in the direction of training “State administration”, speciality “State service”. Educational concept of the institute is based on the priorities of training qualified personnel responsible for public administration in agriculture and local government, able to develop, analyze and implement state policy, creatively, efficiently and effectively perform administrative functions, promote innovative processes in society and sustainable development of Ukraine**.**

Administrative monitoring of master programmes is performed by:

Faculty of professional training and executives development in agricultural and environmental industries organizes and coordinates educational process, based on the systems approach and interdisciplinary training principle aimed to develop a new generation of public servants, capable of innovative thinking, decision-making in the network of management, production and socio-economic problems**.**

The programme provides advanced legal, environmental, political, managerial, social, humanitarian, professional training for legal, organizational, administrative and advisory management activities in AIC of Ukraine.

Educational process at the faculty is an integral part of pedagogic activities and provides education of future professionals in the best traditions of national and world culture based on human values, implementing the programme of renewal and development of national economy, culture, science and spiritual unity of the nation and peoples of Ukraine.

The educational process for master students in speciality “State service” includes a number of master programmes: “Sustainable rural development and local self-government”, “State administration of social and economic relations in AIC, “State administration of legal, organizational and personnel support in AIC”, “State administration of land resources and their protection”, “State administration of environmental safety”, “State administration of Forestry and Horticulture”, “State administration in veterinary medicine”, “State administration of engineering and

technical support in AIC", "State administration in plant growing", "State administration of livestock and aquabioresources".

The Master programmes are connected with the specifics of state administration in agriculture and labour market requirements in this sector. Such diversification of master programmes promotes development of students' knowledge and managerial skills necessary for effective administrative work in various branches of AIC**.**

Master students do internship in state and local authorities depending on the specifics of their future activities in state service.

Students have an opportunity to obtain training in the Ministry of Agrarian Policy of Ukraine and Ministry of Agrarian Policy of the ARC, other ministries: the Ministry of Economy of Ukraine, Ministry of Ecology and Natural Resources of Ukraine, Ministry of Transport and Communications of Ukraine, etc., State Forestry Committee of Ukraine, State Committee of Veterinary Medicine, State Inspectorate for quality control of agricultural products and market monitoring, etc., rural district and regional municipalities, etc.

Relationships with foreign partners are implemented through joint projects of educational and scientific institute of postgraduate education with leading European universities, among them: Humboldt University in Berlin (Germany), Weihenstephan-Triesdorf University of Applied Sciences (Germany), Krakow Agricultural University, Wroclaw University of Natural Sciences (Poland).

Scientists of the Institute participate in joint projects with:

Humboldt University (Germany): international project "The impact of environmental and social changes on degradation and protection of marsh soil of Ukraine: the need for institutional changes and political reforms;

Agricultural University of Krakow, Wroclaw University of Natural Sciences (Poland): international project "Modern technologies of production and processing of agricultural products".

In addition, the Institute actively participates in the Canadian-Ukrainian program FARM, to create information system of agricultural consulting services in Ukraine through joint websites. The Head State service of Ukraine included the Institute into International project "Technical Support of public sector reforms in Ukraine"**.**

Speciality:

8.150101 – „ State service"

Qualifications of Master graduates for employment in specialty 8.150101 " State service " 2419.3 – specialists in state service according to the state classifier of professions in Ukraine.

Employment of master graduates in speciality "State service" is carried out according to contracts-appointments concluded between an entrant on master course and state and local governments**.**

SPECIALITY
8.150101 “STATE SERVICE ”

Master programmes

State administration of social and economic relations	TSC of information and telecommunication support of agricultural and environmental sectors (educational building 10, floor 3, room 308, tel: 527-86-48) Coordinator – doctor, prof. M.M.Bilynska тел: 527-86-48
Sustainable rural development and self-government of local communities	TSC of economics, accounting and finances (educational building 10, floor 4, room 407, tel: 527-82-69) Coordinator – doctor of economics, prof.V.K.Tereshchenko tel: 527-82-69
State administration of legal, organizational and personnel support in AIC	TSC of European integration of land, agricultural and environmental law of Ukraine (educational building 6, floor 2, room226, tel: 257-33-10) Coordinator– candidate of jurisprudence O.S.Yara tel: 257-33-10
State administration and protection of land resources	TSC of land management, cadastre and land valuation (educational building 6, floor 2, room. 212, tel: 259-97-31) Coordinator– candidate of agriculture., associate prof. V.M.Kryvov tel: 258-05-24
State administration of environmental safety in AIC	TSC of biology and ecology of subtropical plants and Landscape (educational building 4, floor 3, room 72, tel: 527-81-95) Coordinator– candidate of agriculture, associate professor N.M.Ridey tel: 527-81-58

State administration in forestry and park gardening sector	TSC of forest management, forest certification and standardization (educational building 1, floor 3, room 98, tel: 527-83-31) Coordinator– candidate of agriculture., associate prof. V.A.Svynchuk Tel: 527-82-93
State administration in veterinary medicine	TSC of Veterinary Medicine of productive animals (educational building 12, floor 2, room 301 block A, tel: 527-88-56) Coordinator– candidate of veterinary, associate prof. V.M.Lakatosh Tel: 527-89-24
State administration of engineering and technical support in AIC	MTSC of standardization of agricultural machinery, certification and service (educational building 11, floor 3, room 346, tel: 527-88-53) Coordinator– candidate of engineering, associate prof. V.D. Voitiuk tel: 527-88-53
State administration in plant growing	MTSC of agricultural technologies, standardization and certification (educational building 4, floor 3, room 68-A, tel: 527-86-76) Coordinator– candidate of agriculture., associate prof. M.F.Ivaniuk Tel: 527-82-13
State Administration of livestock and water bioresources	TSC of animal genetics and breeding (educational building 1, floor 3, room 81, tel: 527-82-30) Coordinator– candidate of agriculture., associate prof. B.M.Bochkov Tel: 527-82-30

Disciplines of master programme	Semester	Credits
Compulsory disciplines for all students of master course in NULES of Ukraine		
World agriculture and food resources	1	1,0
Agricultural, land and environmental law	1	1,0
Philosophy of science and innovative development	1	1,5
International standardization, certification of technologies, raw materials, finished products	1	1,0
Strategy of sustainable development of nature and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Course of compensatory equalizing block of disciplines		
Introduction to speciality	1	1,0
Economics I	1	1,0
Law	1	1,0
Fundamentals of Information Technologies	1	1,0
Foreign language	1	1,0
Total		**5,0**
Compulsory disciplines according to the requirements of MES of Ukraine		
Methodology of systematic approach and scientific research	2	1,5
Legal support of state regulation of public	1	3,0
Economics	3	2,5
State administration	1	3,0
State service	1	2,5
Social and humanitarian policy	3	1,5
Political aspects of public administration	3	1,5
Organization of activity of public servant	2	3,0
Computer networking technology	2	1,5
Business foreign language	1,3	7,5
Psychology of management	2	1,5
Total		**29,0**
Optional disciplines chosen by university	2,3	**6,0**
Optional disciplines chosen by students	3	**3,0**
State attestation		
Practical training	3	4,0
Preparation and defense of master's paper	3	6,0
Total		**10,0**
Total		**60,0**

Optional disciplines chosen by university	Semester	Credits
Agricultural policy	2	1,0
State regulation in AIC	3	1,0
Socio-economic development of rural areas	2	1,0
Innovation in AIC	2	1,0
Management consulting	2	1,0
Total		**6,0**

Master programme

STATE ADMINISTRATION OF SOCIAL AND ECONOMIC RELATIONS

The concept of master programme provides development of competencies in state administration of economic relations connected with ensuring food security, economy and management of food sector in agriculture, environmental management, Cross-border cooperation in agriculture, e-management, financial and economic relations - state tax management, budgetary tax policies, accounting in state administration, etc.

Optional disciplines chosen by students	Semester	Credits
Food security	3	1,5
Economics of environment	3	1,0
Economics and management of food sector in AIC	3	1,5
State tax management	3	2,0
Management and marketing in AIC	3	1,0
Financial law	3	1,0
Fiscal policy	3	1,0
Accounting in state administration	3	2,0
Electronic management	3	1,0
Cross-border cooperation in AIC	3	1,0
Total		**3,0**

Proposed topics for masters' papers:

1. State regulation of regional food security.
2. Tax Regulation of agricultural production.
3. State regulation of agricultural food market.

Master programme

SUSTAINABLE RURAL DEVELOPMENT AND SELF-GOVERNMENT OF LOCAL COMMUNITIES

Master programme aims to train contemporary head of a village (township) on issues of industrial and economic basis of rural areas, organization of local government, social development in rural areas, to give economic and legal fundamentals of organization of small forms of farming, development of social partnership and system of social and labor relations, formation of modern rural communities.

Optional disciplines chosen by students	Semester	Credits
Management and marketing in AIC	3	2,0
Financial support of rural development	3	1,0
Economics of environment	3	1,0
Organization of local government system	3	2,0
Theories of motivation systems of social activity	3	1,0
Social and economic development in rural areas	3	2,0
Organization of work of local government officials	3	1,0
State guarantees of financial, legal and organizational autonomy of local communities	3	1,0
Social protection in rural communities	3	1,0
Total		**3,0**

Proposed topics for masters' papers:

1. Administrative and territorial reform as a basis for socio-economic development of rural areas.
2. Economic and legal basics of rural family medicine.
3. Economic policy of sustainable development of rural areas.

Master programme

STATE ADMINISTRATION OF LEGAL, ORGANIZATIONAL AND PERSONNEL SUPPORT IN AIC

Master programme aims to provide specialized knowledge and skills in organization and management of legal service in agriculture, legal and human resources in state administration, basic principles of staff management in central executive bodies and local administrations, local governments, labour legislation, organization of office management in agriculture.

Optional disciplines chosen by students	Semester	Credits
Legislative process	3	1,0
Legal support of state administrations	3	2,0
Financial law	3	1,0
Labour law and social security	3	2,0
Personnel provision of public service bodies in Ukraine	3	1,0
Organization of legal service in AIC	3	1,0
Organization of office management in AIC	3	2,0
Total		**3,0**

Proposed topics for masters' papers:

1. Personnel policy as a component of public administration in AIC.
2. Legal service in AIC.
3. Legal regulation of state service.

Master programme

STATE ADMINISTRATION AND PROTECTION OF LAND RESOURCES

Master's program aims at training highly qualified specialists in state administration, management, protection of land resources, and control over their use, executive officers able to competently perform their job responsibilities and realise the state policy in the sphere of land relations.

Optional disciplines chosen by students	Semester	Credits
Territorial development planning	3	2,0
Administration of state and municipal lands	3	2,0
Evaluation of effectiveness and control of administrative actions in land management	3	1,0
Organization of personnel management in the system of land tenure	3	1,0
State land management at regional and local levels	3	2,0
Environmental economics	3	1,0
State administration of agrochemical service	3	2,0
Technology of rational land use	3	1,0
State administration in the system of protection and reproduction of soil fertility	3	2,0
Total		**3,0**

Proposed topics for masters' papers:

1. Administrative and legal regulation and legal status of land for special purposes.
2. State policy in the sphere of land relations.
3. Organizational and legal principles of State regulation by the State Committee on land of Ukraine.

Master programme

STATE ADMINISTRATION OF ENVIRONMENTAL SAFETY IN AIC

The concept of the master programme involves development of competencies of state administration in the field of environmental safety in agriculture, protection of human and nature from emergency risks in agriculture, ensuring human health and quality of life, sustainable socially economical and ecologically balanced management of agricultural development, prevention of disasters and accidents.

Optional disciplines chosen by students	Semester	Credits
Quality management	3	1,0
Biosafety, technological and environmental safety of territories	3	2,0
Ecological standardization and certification	3	2,0
Modelling and forecasting environment baseline through information technologies	3	1,0
Environmental biotechnology	3	1,0
Environmental management and marketing in agriculture	3	1,0
Environmental law	3	1,0
Environmental policy	3	2,0
Organization of innovative activities in environmental protection	3	1,0
State environmental management	3	2,0
Total		**3,0**

Proposed topics for masters' papers:

1. Standardization as a mechanism of state environmental management in agricultural enterprises.
2. State regulation of environmental activities in agricultural enterprises.
3. Administrative and legal principles of state administration in realization of environmental policy in Ukraine.

Master programme

STATE ADMINISTRATION IN FORESTRY AND PARK GARDENING SECTOR

Master programme provides training of highly skilled specialists for state administration in forestry and park-gardening sector. Master students doing this course have an opportunity to study up-to-date methods of state administration, effective legal and information support of sustainable development in the sector, international principles, criteria and standards of forest and park-gardening management.

Optional disciplines chosen by students	Semester	Credits
Environmental economics	3	2,0
Programme target planning in forestry and park-gardening sector	3	1,0
Up-to-date information systems in forestry and park-gardening sector	3	1,0
Investing in forestry and park-gardening sector	3	2,0
Foreign economic activity in forestry and park-gardening sector	3	1,0
Sustainable development of forestry and park-gardening sector	3	2,0
Forest certification	3	2,0
Total		**3,0**

Proposed topics for masters' papers:

1. Standardization in forestry as a mechanism of state administration in the sector.
2. Perspectives of forest policy formation in Ukraine.

Park-gardening administration in Ukraine.

Master programme

STATE ADMINISTRATION IN VETERINARY MEDICINE

The accomplishment of the programme will enable masters to work effectively in the system of state administration in veterinary medicine, to learn peculiarities of state administration in the sector, law, psychological principles of management activity, to be able at different levels of state regulation to manage human, financial, material, technological, information resources, to organize medical prevention facilities in veterinary medicine, to influence the production of veterinary products, to carry out other organizational and legal activities in conditions of international integration.

Optional disciplines chosen by students	Semester	Credits
Economics, organization and management in veterinary medicine	3	2,0
Infectious diseases of animals and up-to-date methods of diagnostics,treatment and prevention	3	1,0
Non-contagious diseases of animals and up-to-date methods of diagnostics,treatment and prevention	3	1,0
Organization and economics of veterinary affairs	3	1,0
State veterinary-sanitary expertise	3	2,0
Organizational and legal activities of veterinary inspection	3	2,0
Total		**3,0**

Proposed topics for masters' papers:

1. State administration in veterinary medicine.
2. State veterinary sanitation (control) in meat (fish, milk-) processing enterprises.
3. Organization of antiepizootic measures in case of dangerous animal diseases.

Master programme

STATE ADMINISTRATION OF ENGINEERING AND TECHNICAL SUPPORT IN THE AIC

Master programme aims to train specialists in state administration of AIC, capable to participate in formation and maintenance of engineering systems of agroindustrial complex of Ukraine to increase agricultural production, reduce material and energy-consuming technological processes, increase productivity.

Optional disciplines chosen by students	Semester	Credits
Up-to-date information technologies in state administration of ETS AIC	3	1,0
State administration of energy supplies and energy consumption in AIC	3	2,0
State administration of logistics in AIC	3	2,0
State administration of resource conservation in engineering and logistics in AIC	3	2,0
State administration of quality, standardization and certification in engineering and logistics of AIC	3	2,0
State regulation of technical facilities and services market in AIC	3	1,0
Total		**3,0**

Proposed topics for masters' papers:

1. Standardization and certification in state administration of engineering and technical support in AIC.
2. State administration of leasing process in AIC.
3. State regulation of logistical resources in AIC.

Master programme

STATE ADMINISTRATION IN PLANT GROWING

Master programme aims at development innovative expertise in state administration sector to satisfy current demands of society concerning production, processing and marketing of necessary amount of high quality, environmentally friendly products for the domestic market and exports, which involves application of advanced technologies.

Optional disciplines chosen by students	Semester	Credits
Up-to-date technologies of storage and processing of crop production	3	2,0
Current farming systems	3	2,0
Current situation in seed growing	3	1,0
New agricultural technologies in the world	3	1,0
Standardization and certification of agricultural products	3	2,0
Economics and management of food sector complexes in agriculture	3	1,0
Total		**3,0**

Proposed topics for masters' papers:

1. Standardization and certification of crop production as a mechanism forstate administration in the sector.
2. Strategic management of agricultural production in the agricultural regions.
3. State administration of plant growing branches at regional level.

Master programme

STATE ADMINISTRATION IN LIVESTOCK PRODUCTION AND WATER BIORESOURCES

Master programme aims to provide innovative expertise in state administration of the sector, satisfy current demands of society concerning production, processing and marketing of necessary amount of high quality, environmentally friendly products of livestock and water bioresources for domestic market and exports, which involves application of advanced technologies.

Optional disciplines chosen by students	Semester	Credits
State administration of livestock breeding sector	3	1,0
State administration of fish complex of Ukraine	3	2,0
Economics and management of food sector in AIC	3	1,0
State administration in the market of livestock products	3	2,0
Standardization and certification of agricultural products in state administration	3	2,0
Total		**3,0**

Proposed topics for masters' papers:

1. Industry standards, quality management and certification of livestock products in the system of state administration of AIC.
2. State regulation of the meat and meat products.
3. State administration of livestock branches at regional level.

MASTER PROGRAMME OF SOUTHERN BRANCH OF NATIONAL UNIVERSITY OF LIFE AND ENVIRONMENTAL SCIENCES OF UKRAINE "CRIMEAN AGROTECHNICAL UNIVERSITY"

TECHNOLOGICAL FACULTY

Organizes and coordinates the educational process aimed at training specialists in modern technologies of viniculture and zymurgy and carries out cultural and educational work with students.

The educational process for master students is characterised by availability of production and research specialization in viniculture and zymurgy. The programme enables graduates to prepare for practical work in wine making and fermenting enterprises or in academic institutions that specialize in scientific issues of zymurgy and viniculture, or do a postgraduate course.

Centres for practical training of master students in viniculture and zymurgy are: SOE "Alushta", companies "Burliuk, "Magarach" "Izumrudny", public company "Evpatoriysky winery", public company in Southern Coast "Crimea", SOE "Pervomaisk winery", "Zolota balka", Saki winery, SIVandV "Magarach".

Relationships with foreign partners. Established is close contact with Kuban technological university, Krasnodar. In addition, each year 10-15 students do training course in production farms in England, Ireland and France.

Qualification of master graduates in employment: engineer in zymurgy and viniculture (production direction), research engineer in zymurgy and viniculture (research direction).

Graduates apply for jobs in enterprises of fermenting and wine making industry or research institutions that specialize in scientific issues of zymurgy and viniculture, agricultural, forestry and transport enterprises, state service, research institutions of NAS of Ukraine and Academy of Agrarian Sciences, regional and district agricultural administrations, advanced agroindustrial enterprises, etc.

SPECIALITY
8.091704 “ZYMURGY AND VINICULTURE PRODUCTION”

Master programme of production specialization

Zymurgy and viniculture	Department of viniculture and zymurgy (educational building 2, room 103, tel.: 26-34-12) Coordinator – doctor of engineering, prof. Ye.P.Shol’ts-Kulikov Tel.: 26-34-12

Disciplines of master programme	Semester	Credits
Compulsory disciplines for all students of master course in NULES of Ukraine		
Business foreign language	1	1,5
Philosophy of science and innovative development	1	1,5
International standardization, certification of technologies, raw materials, finished products	1	1,0
Strategy of sustainable development of nature and society	1	1,0
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
Total		**7,0**
Disciplines of profession-oriented, humanitarial and socio-economic training		
Management and marketing	1	3,0
Psychology, pedagogy and teaching principles	1	3,5
Higher education and the Bologna Process	1	1,5
Total		**8,0**
Disciplines of natural sciences training		
Peculiarities of research in viniculture	2	1,5
The use of computers in research and design of processes and machines	2	3,0
Ecological problems in viniculture	2	1,5
Methodology of scientific research	1	1,5
Total		**7,5**
Disciplines of professional and practical training		
Special viniculture	2	3,0
Maintenance and repair of process equipment	1	2,0
Designing of enterprises with the basics of CAD	1	1,5
Fundamentals of industrial construction and plumbing	1	1,5
Labour safety in the sector	1	1,5
Technological quality of raw materials for alcoholic beverages production	1	1,5
Total		**11,0**
Optional disciplines chosen by university	2	**19,0**
Optional disciplines chosen by students	3	**8,5**
State attestation	3	4,0
Practical training	1	10,0
Preparation and defense of master's paper	3	15,0
Total		**29,0**
Total		**90,0**

PRODUCTION SPECIALIZATION

Optional disciplines chosen by university	Semester	Credits
Fundamentals of automatic control of technological processes in viniculture	2	2,0
Technology of fruit alcoholic drinks	2	1,5
Perspective technologies in the industry	2	1,5
Viniculture peculiarities of world winemaking regions	2	1,5
Technological calculations of accounting and reporting in the industry	1	1,5
Reliability of equipment of processing enterprises	1	1,5
Research in processing industry	2	2,0
Viniculture	2	1,5
Scientific research practice in specialty	2	6,0
Total		**19,0**

Master programme

ZYMURGY AND VINICULTURE

Development of measures to improve technology in viniculture and fermenting industries. Organization of modern winemaking technology and fermentation products.

Optional disciplines chosen by students	Semester	Credits
Foreign language (optional)	2	4,0
Optimization of technological processes in zymurgy	2	3,0
New technologies in food industry	2	1,5
Total		**8,5**

Proposed topics for masters' papers:

1. Development of technology and equipment for making various sorts of wine.
2. Improved stability of wines based on the improvement of primary winemaking technology.
3. Development of home technology of malt whiski.

FACULTY OF AGRONOMY

Organizes and coordinates the educational process aimed at training specialists in modern technologies of production, storage and primary processing of crop production, fruit and vegetable growing and viticulture, growing of planting material of fruit, berries and grapes, system of plant protection and agrochemical provision of up-to-date technologies in crop production, fruit growing , vegetable production and viticulture, up-to-date technologies of geodesy, land surveying and land cadastre and realizes cultural and educational work with students.

The educational process for master students provides production and research specialization for each specialty. The programme enables graduates to prepare for work in agricultural enterprises specializing in crop and horticultural production or research institutions that specialize in resolving scientific issues in agronomy, agroinformation systems and technologies, land management and cadastre, or do a postgraduate course**.**

Centres of practical training of master students in specialty “Agronomy” are: experimental field with total area of 110 hectares, training and experimental machine-technological station (TEMTS), educational and scientific technological complex for plant growing (ESTCPG), subunit SB NULES of Ukraine “CATU” training and research farm “Kommunar”, training and production farm named after Frunze NULES of Ukraine, Institute of ether oil and medicinal plants of UAAS, Crimea, State Experimental Farm “Plodovod” of Crimean Research Center of agrarian scientific iInstitute of horticulture, UAAS, JSC “MMK named after Illich”, Agroshop № 49, № 55, № 62, № 66, LLC named after Krupskaya Nyzhniogirsky district ARC, JSC “Plemzavod Crimean”; Saki district, LLC “Shturm Perekopa” Krasnoperekopsk district, JMC company ”Gruzia”; and LLC ”Ahrotehnologiya” Pervomaisky district, LLC “Druzhba narodiv” and farm “Boris-Agro” Krasnogvardiysky district ARC, JSC “Peremoga” district Nyzhniogirsky ARC, PAE ”Mriya” Saki district ARC, JSC “Crimean Fruit Company”, LLC “Simferopolskiy” Simferopol region of Crimea, LLC “Lobanovo-Agro” Dzhankoy district; “Pryozerne-Agro” Saki district; “Primoriye-Agro”, “Biliaus-Agro”, “Tarhankut-Agro” Chornomorsk distirct, JSC “Kakhovskyi”; Kakhovka district Kherson region, LLC “Agroliux”; Akymivsk district, farm “Vidrodzhennia” YMCA UAAS Zaporizhia region.

Master students in specialty “Fruit and vegetable growing” and “Viticulture” have practical training in leading agricultural enterprises of the Autonomous Republic of Crimea –company “Chernomorets” private company “Magarach”, JSC ”Burliuk”, LLC “Gardens of Tavrida” Bakhchisarai district; СПГ “Izumrudny”; enterprise “Zaria”, farm ”Dzhankoy” Dzhankoy district; NNTRK PF NULES Ukraine “CATU”, Р-з “Zavetnoye”, LLC “Crimea-greenhouses”, LLC Agrifarm “Pryhorodnoye”; enterprise ”Radianska Ukraina” Simferopol region, state farm named after P.Osipenko, state farm named after S.Perovskaya, state farm “Kachynskiy”, state farm ”Sadovod”, company “Sevastopolskiy” administrative territory of Sevastopol, AE named after Kalinin, LLC “Druzhba narodiv”, enterprise ”Mir” Krasnogvardiysk district; JSC “Pobeda”, JSC “Vesna” Nizhnogirsk nursery garden Nyzhniogirsky district, state farm “Alushta”, state

farm ”Sudak”, state farm “Tavrida”, state farm “Solnechnaya Dolina”, experimental station of mountain horticulture in Foros on the southern coast of Crimea.

Master student, majoring in “Land management and cadastre” do practical training in Reskomzem ARC, State Enterprise “Crimean research and design institute of land management, Crimean branch of the State enterprise “Centre of state land cadastre”, industrial and scientific enterprises of different forms of ownership in Crimea.

Relationships with foreign partners. Faculty maintains close relationships with leading universities in Europe: Vaheninhenskym Agricultural University (Netherlands), Agricultural University of Vienna (Austria), Warsaw Agricultural University (Poland), Moscow University of environment (Russia), etc.

Every year students of the faculty are encouraged to do training in production farms in Germany, Ireland, France, Denmark, and Switzerland.

Qualifications of master graduates in employment under the State job classifier of Ukraine:

in specialty 8.130102 “Agronomy” 2213.1 - scientists (Agronomy), 2213.2 - agronomist researcher, 2213.2 - agronomist, 2213.2 – agronomist of aerodrome; 2213.2 - agronomist-inspector;

in specialty 8.130103 “Fruit and vegetable growing and viticulture” 2213.1 - scientists (Agronomy), 2213.2 – agronomists-researchers, 2213.1 - researcher in fruit and vegetable growing and viticulture, 2213.2 – professional in fruit and vegetable growing and viticulture, 2213.2 - a specialist in floriculture;

in specialty 8.070904 “Land management and cadastre” 2148.2 - engineer and land surveyor, 2148.2 - Specialist in geosystems environmental monitoring, 2148.2 - a specialist in remote sensing and aerospace monitoring, 2148.2 – land surveyor, 2148.2 - cadastral topographer.

Master graduates are provided with employment in agricultural enterprises of different forms of ownership, state quarantine service, research institutions of UAS and UAAS, State Reserves, regional and district state administrations, advanced agricultural farms, etc.

SPECIALITY
8.130102 “AGRONOMY”

Master programmes of production specialization

Substantiation and development of ecological adaptive agricultural system	TSC of agricultural technologies, certification and standardization in AIC, department of general and irrigated agriculture (educational building 1, room 122, tel. 26-31-79) Coordinator – doctor of agriculture, prof. V.P.Gordiyenko tel.: 26-31-79
Management of field crops productivity	TSC of agricultural technologies, certification and standardization in AIC, Department of plant growing, selection, seed growing, agroinformation technologies and systems (educational building 1, room 220, tel. 26-35-31) Coordinator – doctor of agriculture, A.M.Izotov tel.: 26-35-31
Quality of crop production, depending on growing conditions, post harvest handling, storage and processing	TSC of agricultural technologies, certification and standardization in AIC, department of technology of production, storage and processing of plant products (educational building 1, room 223, tel. 26-36-74) Coordinator – doctor of agriculture, prof. Ye.V.Nikolayev tel.: 26-36-74

Master programmes of research specialization *principles of scientific management of formation agrocenosis productivity of field crops*

Principles of scientific management of formation agrocenosis productivity of field crops	TSC of agricultural technologies, certification and standardization in AIC Coordinators: – doctor of agriculture, prof. V.P.Gordiyenko, department of general and irrigated agriculture (educational building 1, room 122, tel. 26-31-79) – doctor of agriculture, prof. Ye.V.Nikolayev, department of technology of production, storage and processing of plant products (educational building 1, room 223, tel. 26-36-74) - doctor of agriculture, A.M.Izotov, department of plant growing, selection, seed growing, agroinformation technologies and systems (educational building 1, room 220, tel. 26-35-31)

Disciplines of master programme	Semester	Credits
Compulsory disciplines for all students of master course in NULES of Ukraine		
Philosophy of science and innovative development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products	1	1,0
Strategy of sustainable development of nature and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines according to the requirements of MES of Ukraine		
Psychology and pedagogy	1	3,0
Information technologies	2	4,5
Geographic information systems	2	3,0
Modeling technological processes and systems	1	3,0
Adaptive farming systems	2	3,5
Systems of up-to-date intensive technologies	1	3,5
World agricultural technologies	2	3,0
Biotechnology in plant growing	1	2,5
Special genetics	2	2,0
Forecasting and programming yields of agricultural crops	2	2,0
Methods and organization of research in agronomy	1	2,0
Economics and agricultural organization of service	2	3,0
Current problems in agroecology	2	3,0
Total		**38,0**
Optional disciplines chosen by university	3	**12,0**
Optional disciplines chosen by students	3	**13,0**
State attestation		
Practical training	2	**10,0**
Preparation and defense of master's paper	3	**10,0**
Total		**20,0**
Total		**90,0**

PRODUCTION SPECIALIZATION

Optional disciplines chosen by university	Semester	Credits
Disciplines course "Agro ecological and biological substantiation of technologies of crop production"		
Up-to-date systems of ecological agriculture	3	2,0
Innovative technologies in plant gardening	3	2,0
Agricultural technologies of development and use of feeding grounds	3	2,0
Energy and raw vegetable resources	3	2,0
Varietal resources of basic agricultural crops and peculiarities of their seed growing	3	2,0
Standardization and certificaton in plant growing	3	2,0
Total		**12,0**

Master programme

SUBSTANTIATION AND DEVELOPMENT OF ADAPTIVE ECOLOGICAL AGRICULTURAL SYSTEMS

Analysis and state of agricultural systems, the direction of their development on ecological principles, environmental problems, agricultural production issues.

Optional disciplines chosen by students	Semester	Credits
Scientific aspects of agriculture	3	2,0
Rotation in modern agriculture	3	2,0
Resource saving technology of mechanical tillage	3	3,0
Integrated weed control in modern agriculture	3	2,0
Agro economic substantiation and development of adaptive farming systems	3	4,0
Total		**13,0**

Proposed topics for masters' papers:

1. Agroeconomic analysis and improvement of adaptive agricultural systems in farms with different forms of ownership.
2. Agroeconomic analysis and improvement of sowing areas structure and crop rotations in farms with different forms of ownership.
3. Scientific substantiation of resource provision for extended soil fertility restoration under different soil and climatic conditions

Master programme

MANAGEMENT OF FIELD CROPS PRODUCTIVITY

Innovative adaptive technologies of growing grain crops. Scientific principles of seed growing, seed quality varieties and yielding properties. Seed production technologies, internal and state control in seed growing of grain crops.

Optional disciplines chosen by students	Semester	Credits
Agrobiological fundamentals of management of field crops productivity	3	3,0
Agrobiological potential of territories and current plant growing	3	3,0
Agromonitoring in plant growing	3	2,0
Operational management of field crops productivity	3	3,0
Seed science and methods of determining seed quality	3	2,0
Total		**13,0**

Proposed topics for masters' papers:

1. Improvement of crops growing technologies fitting with international quality standards.
2. Management of development of highly productive agrophytocenoses of grain crops.
3. Varietal, sowing and productive seed properties depending on biotic and abiotic environmental factors.
4. Seed growing of heterotic sorghum hybrids.

Master programme

QUALITY OF CROP PRODUCTION DEPENDING ON GROWING CONDITIONS, POST HARVEST HANDLING, STORAGE AND PROCESSING

To obtain and deepen knowledge of the modes and methods of storage of crop production, technological schemes of its primary processing, which provide maximum economic benefit.

Optional disciplines chosen by students	Semester	Credits
Scientific and practical substantiation of formation quality of crop production	3	3,0
Scientific and practical principles of standardization and certification of post harvest processing, storage and processing of crop production	3	2,0
Current and advanced technologies of storing grain and field crop seeds	3	2,0
Production technologies, primary processing and storage of raw medicinal, ether and other industrial crops	3	3,0
Current technologies of food production in agricultural enterprises	3	3,0
Total		**13,0**

Proposed topics for masters' papers:

1. Elaboration of ways of improving post harvest processing and storage of grain in agricultural enterprises.
2. Elaboration of ways of improving efficiency of primary processing of grain and seed crops in agricultural enterprises.
3. Elaboration of ways of improving storage of fruit and vegetable products in agricultural enterprises.
4. Elaboration and improvement of conditions for post harvest ripening of grain and seeds to reduce the duration and lower costs.

RESEARCH SPECIALIZATION

Optional disciplines chosen by university	Semester	Credits
Disciplines course " Scientific substantiation of crop production technologies "		
Scientific substantiation of stability in farming	3	2,0
Agrotechnologies and information systems in plant growing	3	3,0
Ecological and biological principles of technological processes in plant growing	3	2,5
Methods and organization of research in plant growing	3	2,0
Standardization and certification in plant growing	3	2,5
Total		**12,0**

Master programme

PRINCIPLES OF SCIENTIFIC MANAGEMENT OF FORMATION AGROCENOSIS PRODUCTIVITY OF FIELD CROPS

Scientific susbstantiation of different agricultural systems on the basis of ecological approach, improvement of crop rotation productivity, production and quality of agricultural products and solutions to problems of environmental protection.

Development and optimization of technological processes of growing crops, adapting them to specific economic and hydrothermal conditions. Increased use of biopotential of territory, varieties and hybrids. Genetic and selective methods of creating and evaluating varieties and hybrids of crops, their ability to adapt to growing conditions. Registration, legal protection of varieties and hybrids.

Development and substantiation of feed production system for farms specialized in different livestock production.

Optional disciplines chosen by students	Semester	Credits
Agrophysics	3	2,0
Scientific aspects of farming	3	2,0
Agrobioresources in plant growing and their rational use	3	2,0
Scientific and agrobiological principles of management of field phytocenoses productivity	3	3,0
Quality management of field crops in technological process	3	2,0
Organization and technology of increased productivity and rational use of natural pastures in Crimea	3	2,0
Total		**13,0**

Proposed topics for masters' papers:

1. Study of field crops productivity under long-term use of different systems of fertilizers and soil tillage in crop rotation.
2. Study of field crops productivity under long-term combination of different systems of fertilizers and soil tillage in soil-protective crop rotation.
3. Adaptation of elements of agricultural technologies to specific and hydrothermal and economic conditions.
4. Optimization of agricultural technologies of cultivating new varieties and hybrids of agricultural crops.
5. Adaptive properties of agricultural crops and means of improving their biological potential.
6. Development and substantiation of raw conveyor for production of mono fodder in farms located in different geographical zones of the Crimea.
7. Development of adaptive, energy-efficient and ecologically economical technologies of growing forage crops in different soil-climatic regions of Crimea.
8. Development of techniques to increase productivity and sustainable use of natural pastures in Crimea.
9. Selection of agricultural crops for increasing adaptive capacity.
10. Monitoring the original selecting material for productivity and product quality.
11. Creation of original material, using up-to-date selecting methods.
12. Comprehensive estimation of new crop varieties and hybrids in state registration.

SPECIALITY 8.130103 "FRUIT AND VEGETABLE GROWING AND VITICULTURE"

Master programmes of production specialization

Varietal technologies in viticulture	TSC of agricultural technologies, certification and standardization in AIC (educational building 1, room 220, tel. 26-35-31) Coordinator – doctor of agriculture, prof. O.P.Dykan' tel.: 26-37-32
Up-to-date technologies of fruit and berries production in southern Ukraine	TSC of agricultural technologies, certification and standardization in AIC (educational building 1, room 220, tel. 26-35-31) Coordinator – doctor of agriculture, prof. V.I.Kopylov tel.: 26-33-35
Up-to-date technologies of vegetable production on field	TSC of agricultural technologies, certification and standardization in AIC (educational building 1, room 220, tel . 26-35-31) Coordinator – doctor of engineering, prof. V.O.Turbin tel.: 26-33-38

Master programmes of research specialization

Scientific and Innovative activities in viticulture	TSC of agricultural technologies, certification and standardization in AIC (educational building 1, room 220,tel. 26-35-31) Coordinator – doctor of agriculture, prof. O.P.Dykan' tel.: 26-37-32
Scientific and Innovative activities in horticulture	TSC of agricultural technologies, certification and standardization in AIC (educational building 1, room 220, tel. 26-35-31) Coordinator – doctor of agriculture, prof. V.I.Kopylov tel.: 26-33-35
Scientific and Innovative activities in vegetable growing on field	TSC of agricultural technologies, certification and standardization in AIC (educational building 1, room 220, tel. 26-35-31) Coordinator – doctor of engineering, prof. V.O.Turbin tel.: 26-33-38

Disciplines of master programme	Semester	Credits
Compulsory disciplines for all students of master course in NULES of Ukraine		
Philosophy of science and innovative development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products	1	1,0
Strategy of sustainable development of nature and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines according to the requirements of MES of Ukraine		
Psychology of management	1	2,0
Agribusiness and marketing in horticulture, vegetable growing and viticulture	2	1,5
Fundamentals of agricultural consulting	1	2,0
Stock-exchange business	3	2,0
Computer technology in horticulture, vegetable growing and viticulture	1	2,0
Applied genetics and fundamentals of cytology	1	3,0
Biochemistry of fruits, vegetables and grapes	1	3,0
Computerized methods of research in fruit and vegetable growing	2	3,0
World agricultural technologies in horticulture, vegetable growing and viticulture	2	4,5
Labour safety in the sector	1	2,0
Biotechnology	1	3,5
Fundamentals of geographic information systems	2	4,5
Total		**33,0**
Optional disciplines chosen by university	2	**20,0**
Optional disciplines chosen by students	3	**9,0**
State attestation		
Practical training	2	12,0
Preparation and defense of master's paper	3	9,0
Total		**21,0**
Total		**90,0**

PRODUCTION SPECIALIZATION

Optional disciplines chosen by university	Semester	Credits
Varietal technologies in vegetable growing on field and melon growing	3	2,0
Innovative technologies in vegetable and mushroom production in hothouses	3	2,0
Up-to-date technologies of processing fruit, vegetables and grapes	3	2,5
Physiological substantiation of cultivation techniques of horticulture crops	3	3,5
Forecasting and programming of yields	3	3,0
Up-to-date varietal technologies in viticulture	3	3,5
Resource saving technologies in grape nursery and viticulture	3	3,5
Total		**20,0**

Master programme

VARIETAL TECHNOLOGIES IN VITICULTURE

Study of current state in viticulture and analysis of technologies of growing grapes in the farms with different forms of ownership, innovative technologies of growing grapes saplings.

Optional disciplines chosen by students	Semester	Cerdits
Efficient grapes growing in farms of different legal forms	3	5,5
Innovative technologies in viticulture	3	3,5
Total		**9,0**

Proposed topics for masters' papers:

1. Improvement of technology of growing grapes in various natural wine-growing regions of Crimea.
2. Productivity of varietal combinations of grapes wildings.
3. Improvement of technology of growing planting grapes stock.

Master programme

UP-TO-DATE TECHNOLOGIES OF FRUIT AND BERRY PRODUCTION IN THE SOUTH OF UKRAINE

Study of up-to-date technologies in horticulture (the use of new varieties, ways of regulating fruit load on stunted plants, the use of biologically active substances to improve yield and resistance to unfavourable environmental factors) that result in highly accurate ability to program and forecast the yields of fruit plantations.

Optional disciplines chosen by students	Semester	Credits
Up-to-date technologies in horticulture	3	6,0
Up-to-date technologies of fruit plants reproduction	3	3,0
Total		**9,0**

Proposed topics for masters' papers:

1. Using feebly-growing rootstock to create high-yielding seed fruit tree plantations.
2. Using up-to-date methods of fruit trees reproduction.
3. Creating high-yielding berry plantations.

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Master programme

UP-TO-DATE TECHNOLOGIES OF VEGETABLE GROWING ON FIELD

Study international experience in vegetable growing on field, new varieties and seed production technologies of vegetables, potatoes, melons in Southern Ukraine.

Optional disciplines chosen by students	Semester	Credits
Organic vegetable and potato growing	3	3,0
Vegetable crops in decorative design	3	2,0
Melon cultures in the south of Ukraine	3	2,0
Seed production of vegetables, potatoes and melon crops	3	2,0
Total		**9,0**

Proposed topics for masters' papers:

1. Scientific substantiation and development of varietal technologies in vegetable and melon growing on field.
2. Seed production of cabbage plants using direct method.
3. Agrobiological evaluation of early varieties of melon cultures in the steppe zone of Crimea.

RESEARCH SPECIALIZATION

Optional disciplines chosen by university	Semester	Credits
Planning and organization of research in vegetable growing on field and in hothouses	3	2,0
Planning and organization of research in seed production and selection of varieties and heterotic hybrids of vegetable and melon cultures	3	2,0
Planning and organization of research in technology of storage and processing of vegetables and fruits	3	3,0
Physiological basis of high productivity of agrocenoses	3	5,0
Natural resource potential and horticulture in Crimea	3	2,0
Agrotechnical research in viticulture	3	3,0
Grape varieties and balanced technologies in viticulture	3	3,0
Total		**20,0**

Master programme

SCIENTIFIC AND INNOVATIVE ACTIVITIES IN VITICULTURE

Study of agrobiological characteristics of new grape varieties and development of up-to-date technologies of their cultivation. Elaboration of technology of energy and resource saving in grape nursery garden.

Optional disciplines chosen by students	Semester	Credits
Scientific support of cultivating grapes in extreme conditions	3	3,5
Energy-and resource-saving technologies in grape nursery	3	3,5
Up-to-date technologies of vineyard reconstruction	3	2,0
Total		**9,0**

Proposed topics for masters' papers:

1. Study of new varieties of grapes.
2. Improved technology of cultivating table and technical grapes.
3. Elaboration of energy and resource-saving technologies in grape nursery.

Master programme

SCIENTIFIC AND INNOVATIVE WORK IN HORTICULTURE

Study up-to-date methods of research into fruit and berry plants and best foreign and domestic practices of creating highly productive fruit and berry plantations and their introduction.

Optional disciplines chosen by students	Semester	credits
Research into fruit production	3	3,0
Up-to-date methods of selection and introduction of horticulture	3	4,0
New technologies of growing rootstocks	3	2,0
Total		**9,0**

Proposed topics for masters' papers:

1. Study and evaluation of new varieties of fruit and berry crops in different environments in southern Ukraine.
2. Study of up-to-date methods of growing rootstocks.
3. Study of physiological bases of creating highly productive fruit and berry plantations.

Master programme

SCIENTIFIC AND INNOVATIVE WORK IN VEGETABLE GROWING ON FIELD

Study research methods in vegetable growing on field and in hothouses, planning and research into seed growing and selection of heterotic hybrid varieties of vegetable and melon crops.

Optional disciplines chosen by students	Semester	Credits
World range and scientific substantiation of introduction new vegetable crops	3	3,0
Scientific and innovative work in vegetable growing on field	3	3,0
Programming and forecasting vegetable crops	3	3,0
TOTAL		**9,0**

Proposed topics for masters' papers:

1. World range, scientific substantiation and elaboration of technological processes of cultivating introduced vegetable crops in southern Ukraine.
2. Scientific substantiation of technological elements of cultivating early potatoes.
3. Planning and organization of research in seed growing and selection of onion varieties.
4. Study of factors affecting storage quality of fruits and vegetables.

SPECIALITY
8.070904 " LAND MANAGEMENT AND CADASTRE"

Master programmes of production specialization

Management of land resources, land market, land use economics	Department of land management and geodesy (educational building 2, room 218, tel. 26-38-75) Coordinators – doctor of architecture A.O.Safonov, candidate of geology, associate prof. V.M.Gorbatiuk Tel.: 26-38-75

Disciplines of master programme	Semester	Credits
Compulsory disciplines for all students of master course in NULES of Ukraine		
Philosophy of science and innovative development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products	1	1,0
Strategy of sustainable development of nature and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines according to the requirements of MES of Ukraine		
Pedagogy of higher education	1	1,0
Economic and labour law	1	1,0
Physical education	1	1,0
Management of land resources	2	4,0
Legislation on real estate cadastre	2	2,0
GIS in cadastral systems	2	4,0
Monitoring and land protection	2	4,0
Methodology and scientific research methods	1	1,0
Licensing and patenting of scientific products	1	1,0
Information technologies in scientific research	1	2,0
Labour safety in the sector	1	1,0
Civil defense	2	1,0
Legal process in land management	2	2,0
Organization of land management operations	1	3,0
Automation in land management	2	3,0
Total		**31,0**
Optional disciplines chosen by university	3	**10,0**
Optional disciplines chosen by students	3	**8,0**
State attestation		
Practical training		10,0
Research practice		17,0
Preparation and defense of master's paper		7,0
Total		**34,0**
Total		**90,0**

PRODUCTION SPECIALIZATION

Optional disciplines chosen by university	Semester	Credits
Land use and land management economics	3	2,0
Forecasting of land use	3	3,0
Land and real estate market	3	2,0
Digital mapping	3	3,0
Total		**10,0**

Master programme

MANAGEMENT OF LAND RESOURCES, LAND MARKET, AND ECONOMICS OF LAND USE

Analysis of land management, direction of their ecological development, problems of land protection, management support of effective land use.

Optional disciplines chosen by students	Semester	Credits
Scientific expertise of projects of territorial organization	3	2,0
Registration of land ownership	3	2,0
Expert evaluation of land	3	2,0
Geodetic support of land management operations	3	2,0
Всього		**8,0**

Proposed topics for masters' papers:

1. Analysis of state and ways of improving land management efficiency.
2. Contour-meliorative organization of territories.
3. Project development of territorial organization taking into consideration biological potential of land.

FACULTY OF MECHANIZATION

Organizes and coordinates educational process aimed at training specialists in agricultural mechanization, operation and maintenance of vehicles, organization of transportation and provides cultural and educational work with students.

The educational process for master students provides production and research specialization for the specialty. The graduates will be able to work in research, design, engineering and agricultural organizations on research, development, production and use of agricultural machinery, and automobile transportation of agricultural goods, or do a postgraduate course**.**

Centres for practical training of master students are: scientific-production farm ‘Nauka”, LLC “Agrofirm named after N.K. Krupska, experimental machine-technological station SB NULES Ukraine “CATU”, training-research and crop production complex SB NULES Ukraine “CATU”, training-research and livestock production complex SB NULES Ukraine “CATU”.

Relationships are established with foreign partners from several leading universities including: Belarusian state agrarian technical university (Minsk, Belarus), Institute of agricultural mechanization of National academy of sciences of Belarus (Minsk), Russian institute of horticulture (Michurinsk, Russia), Moscow agricultural academy named after Timiryazev (Moscow, Russia), Russian scientific research institute of agricultural engineering (Moscow, Russia), Research institute of horticulture of non-black soil area (Biryuliovo, Russia), Moldova institute of horticulture and viticulture (Kishinev, Moldova), Scientific- production association “VYERUL” (Kishinev, Moldova), Russian Institute of Viticulture and viniculture (Novocherkas’k, Russia), Concern “Klaas-Academy” (Germany), Concern “Werber” (Germany), Armenian agricultural institute, Agricultural university of Kuban (Krasnodar), Technical university of Chelyabinsk (Chelyabinsk, Russia).

Master qualification in employment according to the state classifier of professions in Ukraine:

speciality 8.091902 "Mechanization of agriculture 2145.1 - research engineer in mechanization of agriculture (for production and research specializations).

Employment

Master graduates apply for jobs in agricultural, forestry and transport enterprises with different form of ownership, government departments, research institutions of NAS of Ukraine and Academy of Agrarian Sciences, state reserves, regional and district administrations, advanced agroindustrial farm, etc.

SPECIALITY
8.091902 “MECHANIZATION OF AGRICULTURE”

Master programmes of production specialization

Mechanization of agriculture	Department of agricultural machinery (educational building 2, room 2/212, tel. 26-34-95) Coordinator – doctor of engineering, prof. I.B.Berenshtein tel.: 26-34-95
Mechanization of livestock production	Department of technological equipment for processing enterprises and computer systems (educational building 2, room 2/308,tel. 26-31-78) Coordinator – candidate of engineering, associate prof. Yu.B.Gerber tel.: 26-31-78
Mechanization of processing and storage of agricultural products	Department of technological equipment for processing enterprises and computer systems (educational building 2, room 2/308,tel. 26-31-78) Coordinator – candidate of engineering, associate prof. Yu.B.Gerber tel.: 26-31-78
Life and labour safety in agriculture	Department of life and labour safety (educational building 1, room 1/325, tel. 26-33-53) Coordinator – doctor of medicine, prof. M.P.Barsukov tel.: 26-33-53
Technical service	Department of mechanization, energy and technical services (educational building 2, room 2/307,tel. 26-38-23) Coordinator – doctor of engineering, prof. L.F.Babyts’ky tel.: 26-38-23
State technical supervision	Department of mechanization, energy and technical services (educational building 2, room 2/307,tel. 26-38-23) Coordinator – doctor of engineering, prof. L.F.Babyts’ky tel.: 26-38-23

Master programmes of research specialization

Research into process of mechanization in perennial plantations	Department of agricultural machinery (educational building 2, кім. №2/212, тел. 26-34-95) Coordinator – doctor of engineering, prof. I.B.Berenshtein tel.: 26-34-95
Research into mechanization process in soil cultivation	Department of mechanization, energy and technical services (educational building 2, кім. №2/307, тел. 26-38-23) Coordinator – doctor of engineering, prof. L.F.Babyts'ky tel.: 26-38-23

Disciplines of master programme	Semester	Credits
Compulsory disciplines for all students of master course in NULES of Ukraine		
Philosophy of science and innovative development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products	1	1,0
Strategy of sustainable development of nature and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines according to the requirements of MES of Ukraine		
Ecology of labour	1	1,0
Stock market	1	1,0
Pedagogy	3	2,0
Engineering psychology	1	2,0
Applied computer technologies	2	2,0
Agricultural services and information support	2	1,0
Theory and technology of scientific research	2	2,0
Analysis of technological systems	2	1,0
Precision farming	2	2,0
Geoinformation systems	2	1,0
Theory and technology of machine serviceability renovation	1	2,0
Civil defence	1	1,0
Energy supply in agriculture	2	2,0
Reliability of technological systems	1	1,0
Engineering management	1	2,0
Transport process in agriculture	1	2,0
Agricultural irrigation	1	1,0
Modeling technological process and systems	2	2,0
Life safety	1	2,0
Total		**30,0**
Optional disciplines chosen by university	2	**20,0**
Optional disciplines chosen by students	3	**10,0**
State attestation		
Practical training	2	8,0
Preparation and defense of master's paper	3	15,0
Total		**23,0**
Total		**90,0**

PRODUCTION SPECIALIZATION

Optional disciplines chosen by university	Semester	Credits
Bionic directions in designing agricultural machines	2	3,0
Alternative energy sources in southern Ukraine	2	3,0
Inventions and patent science	2	3,0
Mechanical and mathematical research methods	2	4,0
Technology of testing agricultural machinery	2	4,0
Methods of data processing	2	3,0
Total		**20,0**

Master programme

MECHANIZATION OF AGRICULTURE

The programme provides training for specialists in designing technological processes of growing crops, designing and organization of service enterprises to optimize machine and equipment systems.

Optional disciplines chosen by students	Semester	Credits
Technological processes in agriculture	3	5,0
Machine systems in agriculture	3	5,0
Total		**10,0**

Proposed topics for masters' papers:

1. Designing technological processes of growing crops.
2. Optimization of machine systems for agricultural production.

Master programme

MECHANIZATION OF LIVESTOCK PRODUCTION

The programme provides training for specialists in designing and optimization of technological processes and machines in livestock production.

Optional disciplines chosen by students	Semester	Credits
Technological processes in livestock production	3	5,0
Installation and putting into operation farm equipment	3	5,0
Total		**10,0**

Proposed topics for masters' papers:

1. Designing of technological processes in livestock production Проектування технологічних процесів у тваринництві.
2. Optimization of machine systems for livestock farms.

Master programme

MECHANIZATION OF PROCESSING AND STORAGE OF AGRICULTURAL PRODUCTS

The programme provides training for specialists in designing machine processes and special equipment for processing and storing agricultural products, optimization of machine complex and equipment for processing lines.

Optional disciplines chosen by students	Semester	Credits
Technological processes in agricultural processing industry	3	5,0
Designing agricultural enterprises of processing industry	3	5,0
Total		**10,0**

Proposed topics for masters' papers:

1. Designing machine processes and special equipment for processing and storing agricultural products.
2. Optimization of machine complex and equipment for processing lines.

Master programme

LABOUR SAFETY IN AGRICULTURE

The programme provides training for specialists in elaboration of labour safety management systems, substantiation of technical parameters for better working conditions.

Optional disciplines chosen by students	Semester	Credits
Organization of labour safety in AIC	3	5,0
Safety of production processes in agriculture	3	5,0
Total		**10,0**

Proposed topics for masters' papers:

1. Elaboration of labour safety management systems in AIC.
2. Substantiation of technical parameters for improvement of safety and working conditions.

Master programme

TECHNICAL SERVICE

The programme provides training for specialists in organization of maintenance stations, investigation into causes of machine and equipment failures in AIC, optimization of technical service systems.

Optional disciplines chosen by students	Semester	Credits
Planning and organization of repair workshops	3	5,0
Designing of repair workshops	3	5,0
Total		**10,0**

Proposed topics for masters' papers:

1. Organization of modern maintenance stations.
2. Optimization of technical service systems.

Master programme

STATE TECHNICAL SUPERVISION

The programme provides training for specialists in elaboration of management systems for controlling the state of machinery maintenance in AIC.

Optional disciplines chosen by students	Semester	Credits
Organization of state technical supervision in AIC	3	5,0
Designing of enterprises producing agricultural machinery	3	5,0
Total		**10,0**

Proposed topics for masters' papers:

1. Evaluation and provision of reliability of agricultural machines.
2. Elaboration of management systems for state supervision in AIC.

RESEARCH SPECIALIZATION

Optional disciplines chosen by university	Semester	Credits
Bionic directions of designing agricultural machines	2	3,0
Alternative energy sources in southern Ukraine	2	3,0
Inventions and patent science	2	3,0
Mechanical and mathematical research methods	2	4,0
Technology of testing agricultural machinery	2	4,0
Methods of data processing	2	3,0
Total		**20,0**

Master programme

RESEARCH INTO PROCESS OF MECHANIZATION IN PERENNIAL PLANTATIONS

Research, development and improvement of working processes of agricultural machines for perennial plantations.

Optional disciplines chosen by students	Semester	Credits
Research and development of technological processes in perennial plantations	3	5,0
Optimization of mechanization processes in perennial plantations	3	5,0
Total		**10,0**

Proposed topics for masters' papers:

1. Research into processes, operating mechanisms and modes of agricultural machines for perennial plantations.
2. Optimization of machinery for perennial plantations.

Master programme

RESEARCH INTO MECHANIZATION PROCESS IN SOIL CULTIVATION

Research, development and improvement of agricultural machinery operation for soil cultivation.

Optional disciplines chosen by students	Semester	Credits
Optimization of processes in soil mechanization	3	5,0
Energy-saving technologies in mechanized tillage in southern Ukraine	3	5,0
Total		**10,0**

Proposed topics for masters' papers:

1. Research into processes, operating mechanisms and modes of agricultural machines for soil cultivation.
2. Improvement and elaboration of machinery for soil cultivation with elements of bionic prototypes.

FACULTY OF ECONOMICS

Organizes and coordinates educational process aimed at training specialists who possess profound knowledge of organizational, production and economic activities of enterprises, institutions and organizations of various types, up-to-date agrotechnologies, and are able to occupy managerial positions. The faculty provides cultural and educational work with students.

The educational process for master students provides production and research specialization for each speciality. The graduates will be able to practically implement efficient and environmental technologies, methods of management which include modeling of market factors, forecasting and reducing risks, implementation of high technology products into agroindustrial production.

Centres of practical training for master students are: training and research pedigree poultry plant named after Frunze NULES Ukraine, JSC “Crimean Plemzavod” in Saki district of Crimea; Subsidiary winery “Privetnoye”; research and production association “Massandra”, LLC “Urozhaynoye” Simferopol district; State enterprise “Agrofirm Magarach” of National wine institute “Magarach”; State enterprise “Research firm of Crimean institute of agroindustrial production UAAS”; subsidiary “Tavria-2” JSC “Tavria” Nova Kakhovka; agricultural firm “Pryhorodnoye” Simferopol region; agricultural enterprise “Zoloty kolos” Leninsky district ARC; agricultural production cooperative “Dzhankoy”; JSC Poultry plant “Yuzhnaya” Simferopol district; state enterprise “Livadiya” research and production association “Massandra”; subsidiary “Agrofirm Zavetnoye” Simferopol district; agricultural firm “Druzhba narodiv” Krasnogvardiysk district; JSC “Shyroke” Simferopol district; vintage wines and cognacs plant “Koktebel” in Sudak; JSC “Krymmoloko” in Simferopol.

Master qualification in employment according to the state classifier of professions in Ukraine:

in speciailty 8.050107 “Economics of enterprise” 1210.1 – manger and assistant manager of economic department of an enterprise, association or a firm of AIC and service sector, 1221 - director and assistant director of administrative subdivisions (rural, district councils, district and regional administration); 2441.2 – economists-analysts in agricultural firm (by the type of economic activity); 1223.2 – managers of departments of commodity, agricultural and industrial commodity exchange;

in speciality 8.050106 “Accounting and audit” 1231 - Chief accountant, 3433 - accountant; 2411.2 - auditor; 2411.2 – accountant-auditor; 2411.2 – accountant-expert; 2419.3 – specialist-accountant, 1231 - Chief auditor, 1231 - Head of audit department; 1231 - Head of centralized accounting department;

in specialty 8.050201 “Management of organizations” 1229.1 – head of subdivision; 1229.3 – head-chief specialist; 1229.3 – division head, 1231 - head of

office (functional subdivision); 1311 – chairman of cooperative (society, etc.) 1312 - chairman of industrial cooperative, 1312 - Director (head) of small industrial enterprise (company) 1314 - director (head) of small trading company, store manager; 1439.8 - production and electricity distribution manager; 1477.1 – personnel manager, advertising manager, 1475.4 - supplies manager, sales manager, manager (superintendent) in logistics, 1491 - enterprise manager 1479 - manager of consulting services; 2310.2 – assistant, university teacher, 2320 - teacher of professional training institutions; 2351.1 - researcher (methods of training); 2359.1 - researcher (in other fields of study); 2359.2 - lecturer; 2419.1 - researcher (marketing, business efficiency, realization of production); 2412.1 - researcher (labour and employment); 2412.2 - labour economist, engineer in labour organization labour organization and regulation, training, professional adaptation, labour market analyst; 2419.2 – specialist in public relations and media, specialist in enterprise effectiveness, rationalization of production, methods of expanding markets, commodity market research, standardization, certification and quality; 2413.1 - researcher (exchange transactions); 2419.3 - advisor (public authorities), specialist in personnel and state service; 2419.2 - specialists in marketing, business efficiency, financial performance, rationalization of production, intellectual property and innovation; 2441.2 - economist on contracting and presentations, economic advisor, consultant on economic issues, economic issues reviewer, economist on logistics, contracting and presentations, 3431 - consultant (in public authorities, the executive committee) 3434 - assistant, assistant in core business activities; 3340 – teacher in professional training; 3436.1 - assistant managers in agencies and organizations; 3436.2 - assistant managers of production and other basic departments, 3436.3 - assistant managers of small businesses.

Employment

Master graduates apply for jobs in agricultural enterprises of various types of ownership, state service, research institutions of NAS of Ukraine and Academy of Agrarian Sciences, departments of the Ministry of Agrarian Policy of Ukraine, regional and district agricultural administrations, advanced agricultural enterprises, budgetary and banking institutions, etc.

SPECIALITY
8.050107 “ECONOMICS OF ENTERPRISE”

Master programmes of production specialization

Economics and economic analysis in the enterprises of AIC	Department of economics and organization of agroindustrial enterprises (educational building 1, кім. №433, тел. 26-37-21) Координатор – к. е. н., доц. Мабіала Жильберт Тел.: 26-37-21
Economics and organization of wine-making enterprises in wine-making sector	Department of economics and organization of agroindustrial enterprises (educational building 1, room 433, tel. 26-37-21) Coordinator – doctor of economics, prof. I.G.Matchyna tel.: 26-37-21
Economics and organization of ether plants production, medicinal herbs and tobacco	Department of economics and organization of agroindustrial enterprises (educational building 1, room 433, tel. 26-37-21) Coordinator –candidate of economics, associate prof. Ye.O.Maslich tel.: 26-37-21

Master programme of research specialization

Methodology and organization of activity of economic entities	Department of economics and organization of agroindustrial enterprises (educational building 1, room 433, tel. 26-37-21) Coordinator – doctor of economics, prof. G.M.Chorny tel.: 26-37-21

Disciplines of master programme	Semester	Credits
Compulsory disciplines for all students of master course in NULES of Ukraine		
Philosophy of science and innovative development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products	1	1,0
Strategy of sustainable development of nature and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines according to the requirements of MES of Ukraine		
Financial management	1	3,0
Personnel management	2	3,0
International management	2	3,0
Management of enterprise potential	1	3,0
Economic diagnostics Економічна діагностика	1	3,0
Project management	2	3,0
Strategic management of enterprise	2	3,0
Total		**21,0**
Optional disciplines chosen by university	1,2	**8,0**
Optional disciplines chosen by students	1,2	**6,0**
State attestation		
Practical training	2	9,0
Preparation and defense of master's paper	2	9,0
Total		**18,0**
Total		**60,0**

PRODUCTION SPECIALIZATION

Optional disciplines chosen by university	Semester	Credits
State economic policy in agriculture	1	2,0
Intellectual property	2	1,0
Economic organisation of the enterprise	2	1,5
Strategic planning	2	2,0
Methods of teaching economic disciplines	1	1,5
Total		**8,0**

Master programme

ECONOMICS AND ECONOMIC ANALYSIS IN THE ENTERPRISES OF AIC

Master programme aims to deepen knowledge in systems analysis of enterprises. Master students obtain knowledge in detection of internal reserves of rational management of material, labour and financial resources. The programme provides training for managers in economicsector, economists-analysts, experts-consultants in economic organization of enterprises.

Optional disciplines chosen by students	Semester	Credits
Economic analysis in agricultural enterprises	1	3,0
Organization of business processes in agricultural enterprises	2	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Systems analysis of business activities (industry production) and identification of ways of enhancing its economic efficiency.
2. Diagnostics of productive capacity of enterprises and identification of ways of enhancing its economic efficiency.
3. Analysis of business activities of enterprises and ways of enhancing its economic efficiency.

Master programme

ECONOMICS AND ORGANIZATION OF ENTERPRISES IN WINE-MAKING SECTOR

Master programme aims to deepen knowledge in organization of grape and wine production. Special attention is given to study and evaluation of efficiency of wine-making enterprises. The programme provides training for middle and top managers and entrepreneurs in production.

Optional disciplines chosen by students	Semester	Credits
Economics and organization of wine-making enterprises	1	3,0
Fundamentals of entrepreneurial business and agribusiness in viticulture	2	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Business plan of viticultural and wine-making business development.
2. Diagnostics of competitiveness of viticultural and wine-making enterprises and ways of enhancing its efficiency.
3. Economic efficiency of resource potential of viticultural and wine-making business.

Master programme

ECONOMICS AND ORGANIZATION OF ETHER OIL PLANTS, MEDICINAL HERBS AND TOBACCO PRODUCTION

Master programme aims to deepen knowledge in ether oil plants, herbs and tobacco production. Special attention is given to study and evaluation of efficiency and production of specified agricultural crops. The programme provides training for managers and entrepreneurs in production.

Optional disciplines chosen by students	Semester	Credits
Economics and organization of viticultural and wine-making subcomplex	1	3,0
Fundamentals of entrepreneurial business and agribusiness in viticulture	2	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Business plan of development of ether oil production (production of medicinal herbs, tobacco).
2. Diagnostics of competitiveness of ether oil production (production of medicinal herbs, tobacco) in agricultural enterprises and ways of enhancing its efficiency.
3. Economic efficiency of resource potential of ether oil production (production of medicinal herbs, tobacco) in agricultural enterprises.

RESEARCH SPECIALIZATION

Optional disciplines chosen by university	Semester	Credits
State economic policy in AIC	1	2,0
Intellectual property	2	1,0
Economic organisation of the enterprise	2	1,5
Strategic planning	2	2,0
Methods of teaching economic disciplines	1	1,5
Total		**8,0**

Master programme

METHODOLOGY AND ORGANIZATION OF ACTIVITY of economic entities

Master programme aims to deepen knowledge of students who intend to engage in research and teaching. The programme provides learning of theoretical principles of innovative activity of entities and practical skills of its organization in market conditions. The program includes study of organizational engineering of farm enterprises.

Optional disciplines chosen by students	Semester	Credits
Innovation economics	1	3,0
Economic evaluation of organizational effectiveness of business structure in AIC	2	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Evaluation of organizational effectiveness of agricultural enterprises.
2. Development of innovative activity in agricultural enterprises.
3. Feasibility study of innovative business development (in the industry, region).

SPECIALITY
8.050106 "ACCOUNTING AND AUDIT"

Master programmes of production specialization

Organization of bank accounting	Department of accounting and audit (educational building 1, room 414, tel. 26-37-38) Coordinator – candidate of economics, associate prof. A.K.Jalal tel.: 26-37-38
Organization of management accounting in the enterprises of AIC	Department of accounting and audit (educational building 1, room 414, tel. 26-37-38) Coordinator – candidate of economics, associate prof. S.Ya. Dementieva tel.: 26-37-38
Organization of accounting and audit in land relations	Department of accounting and audit (educational building 1, room 414, tel. 26-37-38) Coordinator – candidate of economics, associate prof. M.V.Dodonova Тел.: 26-37-38
Organization of accounting in budget-funded organizations	Department of accounting and audit (educational building 1, room 414, tel. 26-37-38) Coordinator – candidate of economics, associate prof. V.I.Safonova tel.: 26-37-38

Master programme of research specialization

Methodology and organization of activity of economic entities	Department of accounting and audit (educational building 1, room 414, tel. 26-37-38) Coordinator – candidate of economics, associate prof. P.M Maidanevych tel.: 26-37-38

Disciplines of master programme	Semester	Credits
Compulsory disciplines for all students of master course in NULES of Ukraine		
Philosophy of science and innovative development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products	1	1,0
Strategy of sustainable development of nature and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines according to the requirements of MES of Ukraine		
Personnel management	2	3,0
International management	2	3,0
Organization of accounting	1	4,5
Financial management	1	3,0
Strategic analysis	2	3,0
Enterprise reporting	1	4,5
Total		**21,0**
Optional disciplines chosen by university	1,2	**8,0**
Optional disciplines chosen by students	1,2	**6,0**
State attestation		
Practical training	2	9,0
Preparation and defense of master's paper	2	9,0
Total		**18,0**
Total		**60,0**

PRODUCTION SPECIALIZATION

Optional disciplines chosen by university	semester	Credits
Forensic-accounting expertise	2	2,0
Methods of teaching accounting and finance disciplines	1	2,0
Models and methods of decision making in analysis and auditing	2	2,0
Financial Analysis	2	2,0
Total		**8,0**

Master programme

ORGANIZATION OF BANK ACCOUNTING

Master programme aims to deepen knowledge in accounting, audit and analysis of banking activity. The programme provides training of students for work in banking sector, including banking control and supervision. The programme also provides knowledge of the organization of information and consulting activities in Ukraine.

Optional disciplines chosen by students	Semester	Credits
Analysis and audit of banking activity	1	3,0
Organization of information and consulting activities	2	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Formation of banking supervision system.
2. Audit of banking activity (or certain banking operations).
3. Analytic analysis of banking activity.

Master programme

ORGANIZATION OF MANAGEMENT ACCOUNTING IN THE ENTERPRISES OF AIC

Master programme aims to deepen knowledge in management accounting. The programme provides training for managers in accounting, accounting analysts, expert consultants in organization of management accounting. Special attention is given to study of management accounting techniques including budgeting. The programme also provides knowledge of organization of information and consulting activities in Ukraine.

Optional disciplines chosen by students	Semester	Credits
Cost accounting and budgeting in agricultural enterprises	1	3,0
Organization of information and consulting activities	2	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Organization of management accounting in the enterprise.
2. Organization of accounting of production (or other) expenses.
3. Improvement of budgeting process in the enterprise.

Master programme

ORGANIZATION OF ACCOUNTING AND AUDIT IN LAND RELATIONS

Master programme aims to deepen knowledge and acquire skills in accounting of land relations, environmental audit. The programme provides profound study of peculiarities of land evaluation: compulsory, expert regulations and documents on accounting of land relations in agriculture.

Optional disciplines chosen by students	Semester	Credits
Accounting and tax records of land relations Bookkeeping and tax accounting of land relations	1	3,0
Audit and land evaluation	2	3,0
Всього		**6,0**

Proposed topics for masters' papers:

1. Accounting and land evaluation in agricultural enterprises.
2. Audit of land relations.
3. Bookkeeping of farmland.

Master programme

ORGANIZATION OF ACCOUNTING IN BUDGET-FUNDED ORGANIZATIONS

The programme provides detailed study of financial and tax accounting in budget-funded organizations and institutions, deepens knowledge and skills in elaboration and analysis of estimates of budget-funded organizations. Master programme provides training of public sector employees.

Optional disciplines chosen by students	Semester	Credits
Tax accounting and reporting in budget-funded organizations	1	3,0
Analysis of estimates in budget-funded organizations	2	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Formation of estimates in budget-funded organizations.
2. Analysis of estimates in budget-funded organizations.
3. Tax accounting in budget-funded organizations.

RESEARCH SPECIALIZATION

Optional disciplines chosen by university	Semester	Credits
Forensic accounting expertise	2	2,0
Methods of teaching accounting and finance disciplines	1	2,0
Models and methods of decision making in analysis and auditing	2	2,0
Financial analysis	2	2,0
Total		**8,0**

Master programme

METHODOLOGY AND ORGANIZATION OF ACTIVITY OF ECONOMIC ENTITIES

Master programme provides training for students who intend to engage in research and teaching. The programme is recommended for students who are inclined to scientific work and pedagogical activities. The programme includes study of research methods in accounting.

Optional disciplines chosen by students	Semester	Credits
Accounting in business management	1	3,0
Methods and organization of scientific research	2	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Organization of management accounting in the enterprise.
2. Organization of accounting in the enterprise.
3. Providing management decisions in the enterprise in the system of management accounting.

SPECIALITY
8.050201 " MANAGEMENT OF ORGANIZATIONS "

Master programmes of production specialization

Formation of effective management activity and its evaluation	Department of Management and marketing (educational building 1, room 505, tel. 26-36-59) Coordinator – candidate of economics, associate prof. O.A.Poliuhovych Tel.: 26-36-59
Management of logistics systems	Department of Management and marketing (educational building 1, room 505, tel. 26-36-59) Coordinator – V.M.Ivanets tel.: 26-36-59
Quality management and competitiveness	Department of Management and marketing (educational building 1, room 505, tel. 26-36-59) Coordinator – candidate of economics, associate prof. Zh.V.Domozhylkina tel.: 26-36-59

Master programme of research specialization

Scientific (theoretical) and practical management of agricultural enterprises	Department of Management and marketing (educational building 1, room 505, tel. 26-36-59) Coordinator –doctor of economics V.O.Bespalov Tel.: 26-36-59

Disciplines of master programme	Semester	Credits
Compulsory disciplines for all students of master course in NULES of Ukraine		
Philosophy of science and innovative development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products	1	1,0
Strategy of sustainable development of nature and society	1	1,0
Business foreign language	1	1,5
Всього		**7,0**
Compulsory disciplines according to the requirements of MES of Ukraine		
Psychology of management	2	2,5
Conflictology	2	1,5
Management of organizations	1	2,5
Strategic management	1	2,5
Investment Management	1	2,5
Innovation Management	2	2,0
AWP of a manager	2	1,5
Total		**15,0**
Optional disciplines chosen by university	1,2	**14,0**
Optional disciplines chosen by students	1,2	**6,0**
State attestation		
Practical training	2	9,0
Preparation and defense of master's paper	2	9,0
Total		**18,0**
Total		**60,0**

PRODUCTION SPECIALIZATION

Optional disciplines chosen by university	Sermester	Credits
Civil defense	2	1,5
Labour safety	2	1,5
Higher education and the Bologna Process	1	1,5
Corporate management	2	2,5
Methodology and organization of scientific research	1	2,0
Methods of teaching in higher education	1	2,0
Fundamentals of management consulting	2	2,0
Intellectual property	2	1,0
Total		**14**

Master programme

FORMATION OF EFFECTIVE MANAGEMENT ACTIVITY AND ITS EVALUATION

The programme provides detailed exploration of management components in agricultural enterprises, develops knowledge and skills of strategic management and evaluation of administrative efficiency. Master programme provides training for middle and senior managers of enterprises.

Optional disciplines chosen by students	Semester	credits
Social and ethical management	1	3,0
Methods of making management decisions	2	3,0
Total		**6,0**

Proposed topics for msters' papers:

1. Evaluation of management efficiency in agricultural enterprises.
2. Improvement of management system of agricultural enterprise by using information technologies.
3. Crisis management.

Master programme

MANAGEMENT OF LOGISTICS SYSTEMS

Master programme aims to deepen knowledge and skills in market research and solving logistics problems. The programme provides advanced study of methods of costs optimization and rationalization of production, distribution and associated services within a single agricultural enterprise and enterprise group.

Optional disciplines chosen by students	Semester	Credits
Management of logistics systems	1	3,0
Management of sales and supplies	2	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Improvement of logistics system of inventory management in agricultural enterprises.
2. Optimization of logistics flows based on informatization of production in AIC.
3. Improvement of logistics management of innovation processes.

Master programme

QUALITY MANAGEMENT AND COMPETITIVENESS

The programme provides training in organization of quality management system and competitiveness taking into consideration business objectives and management policy. The programme provides advanced study of methodology and analysis of indicators of competitiveness and product quality, improvement of quality control system.

Optional disciplines chosen by students	Semester	Credits
Management of product competitiveness	1	3,0
Methods and quality management systems	2	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Management of competitiveness of agricultural products.
2. Quality management in agricultural enterprises.
3. Improvement of quality management system in agricultural enterprises.

RESEARCH SPECIALIZATION

Optional disciplines chosen by university	Semester	Credits
Civil defense	2	1,5
Labour safety	2	1,5
Higher education and the Bologna Process	1	1,5
Corporate management	2	2,5
Methodology and organization of scientific research	1	2,0
Methods of teaching in higher education	1	2,0
Fundamentals of management consulting	2	2,0
Intellectual property	2	1,0
Total		**14,0**

Master programme

SCIENTIFIC (THEORETICAL) AND PRACTICAL MANAGEMENT OF AGRICULTURAL ENTERPRISES

Master programme aims at students who intend to engage in scientific and pedagogical work. The programme includes study of decision making methods and components of a successful career in management.

Optional disciplines chosen by students	Semester	Credits
Science and practice of decision making in management	1	3,0
Axiology and career of a manager	2	3,0
Total		**6,0**

Proposed topics for masters' papers:

1. Formation of competitive strategy of development of agricultural enterprises.
2. Formation of innovation management system of agricultural enterprises.
3. Efficiency of decision making in raising resources (personnel motivation) in agricultural enterprises.

FACULTY OF VETERINARY MEDICINE

The faculty was established in 1988 at Crimean Agricultural Institute. Currently the faculty consists of four departments with educational, scientific and production laboratories. Related departments merged into training and research center of food technologies and quality and safety of livestock products. The faculty provides training for EQL “Bachelor”, “Specialist” and “Master”, candidates and doctors of specialties in veterinary medicine. Training and research at the Faculty is provided by six doctors of sciences, professors, including six Academicians of Crimean Academy of Sciences and 26 candidates of sciences.

The educational process for master students in veterinary medicine and quality and safety of livestock products includes a wide range of master programmes of production and research specializations in “Veterinary Medicine”, which allows graduates to obtain practical and theoretical skills in various branches of veterinary medicine or in academic institutions that specialize in scientific research in veterinary or do a postgraduate course.

Centres of practical training for master students are: training and production livestock complex, regional state laboratory of veterinary medicine of Autonomous Republic of Crimea, advanced farms, district and municipal enterprises of veterinary medicine, district laboratories of veterinary medicine, laboratories of veterinary-sanitary expertise, meat-packing plants, dairies and other processing enterprises of livestock and poultry products.

Master qualification in employment according to the state classifier of professions in Ukraine:

in specialty 8.130501 “Veterinary Medicine” 2223.2 - doctor of veterinary medicine, 2223.2 - doctor of veterinary medicine in meat processing plants, 2223.2 - official doctor of veterinary medicine, 2223.2 - doctor of veterinary medicine for treatment of sports horses.

Employment

Master graduates apply for jobs in agricultural enterprises of different forms of ownership, state veterinary medicine, private clinics of veterinary medicine, etc.

SPECIALITY
8.130501 "VETERINARY MEDICINE"

Master Programmes of production specialization
of training and research center of food technologies and quality and safety of products

Diagnostics, treatment and prevention of poultry diseases	Department of clinical diagnostics and therapy (room 23, tel. 26-36-49) Coordinator – doctor of veterinary, prof. I.P.Kondrahin tel.:26-36-49
Diagnostics, treatment and prevention of internal diseases	Department of clinical diagnostics and therapy (room 23, tel. 26-36-49) Coordinator – doctor of veterinary,prof. I.P.Kondrahin tel. : 26-36-49
Treatment and prevention of surgical diseases of animals	Department of Surgery and Obstetrics (room 4, tel. 26-33-85) Coordinator –candidate of veterinary, associate prof. B.I.Scrypnyk tel. :26-33-85
Clinical pathological animal physiology	Department of Surgery and Obstetrics (room 4, tel. 26-33-85) Coordinator –candidate of veterinary, associate prof. I.A.Gurenko tel.: 26-33-85
Prevention and rehabilitation of adverse farms with infectious diseases	Department of epizootology, parasitology and veterinary-sanitary expertise (room 23, tel. 26-32-79) Coordinator –candidate of veterinary, prof. O.F.Barabash Tel. : 26-32-79
Veterinary-sanitary expertise and sanitary evaluation of livestock products	Department of epizootology, parasitology and veterinary-sanitary expertise (аудиторія № 21, тел. 26-31-42) Coordinator –candidate of veterinary, associate prof. S.Ye.Lysenko tel. 26-31-42

Obstetrics, gynecology and biotechnology of farm animals breeding	Department of Surgery and Obstetrics (room 3, tel. 26-33-85) Coordinator –candidate of veterinary, associate prof. V.I.Yurov tel. :26-33-85
Pathological anatomy, autopsy and forensic veterinary	Department of Anatomy and Physiology of Animals (room33, tel. 26-35-32) Coordinator –candidate of veterinary, associate prof. G.V.Lukashyk tel. :(0652) 26-35-32

Master programmes of research specialization

Current methods of diagnostics, treatment and prevention of internal diseases	Department of clinical diagnostics and therapy (room 23, tel. 26-36-49) Coordinator – doctor of veterinary, prof. I.P.Kondrahin tel. : 26-36-49
Current laboratory methods of evaluating the immune status of productive animals	Department of epizootology, parasitology and veterinary-sanitary expertise (room 21, tel. 26-31-42) Coordinator – doctor of veterinary, prof. V.L.Kovaliov tel. :26-31-42
Ecological morphology	Department of Anatomy and Physiology of Animals (room 33, tel. 26-35-32) Coordinator – doctor of veterinary, prof. B.V.Kryshtoforova tel. : 26-35-32

Disciplines of master programme	Semester	Credits
Compulsory disciplines for all students of master course in NULES of Ukraine		
Philosophy of science and innovative development	1	1,5
Agricultural, land and environmental law	1	1,0
World agriculture and food resources	1	1,0
International standardization, certification of technologies, raw materials, finished products	1	1,0
Strategy of sustainable development of nature and society	1	1,0
Business foreign language	1	1,5
Total		**7,0**
Compulsory disciplines according to the requirements of MES of Ukraine		
Methods of scientific research	1	2,0
Pathological physiology	1	2,0
Comparative anatomy	1	2,0
Clinical pharmacology	1	2,0
Clinical biochemistry	1	2,0
Clinical diagnostics	1	2,0
Pathological anatomy and forensic veterinary	1	2,0
Veterinary-sanitary expertise and fundamentals of technology and standardization of livestock products	1,2	4,0
Management and marketing in veterinary medicine	1,2	2,0
Non-contagious diseases of animals	1,2	6,0
Infectious diseases of animals	1,2	6,0
Всього		**32,0**
Optional disciplines chosen by university	2	**3,0**
Optional disciplines chosen by students	1,2	**9,0**
State attestation		
Practical training	2	6,0
Preparation and defense of master's paper	2	3,0
Total		**9,0**
Total		**60,0**

PRODUCTION SPECIALIZATION

Optional disciplines chosen by university	Semester	Credits
Computer science in veterinary medicine	1	1,5
Higher education in Ukraine and Bologna Process	1	1,0
Total		**2,5**

Master programme

DIAGNOSTICS, TREATMENT AND PREVENTION OF POULTRY DISEASES

Technological processes at poultry plants under current sanitary requirements. Technological schemes of prevention of most common non-contagious and contagious poultry diseases. Economics of current poultry industry.

Optional disciplines chosen by students	Semester	Credits
Current technologies of poultry feeding	2	3,0
Systems of poultry keeping	2	3,0
Technological schemes of poultry diseases prevention	2	3,0
Total		**9,0**

Proposed topics for masters' papers:

1. Veterinary provision of technological processes in poultry industry.
2. Prevention of especially dangerous poultry diseases.
3. Prevention of mineral metabolism in broilers using biogenic nutrients.

Master programme

DIAGNOSTICS, TREATMENT AND PREVENTION OF INTERNAL DISEASES

Modern principles of general prevention of animal diseases. Methods of laboratory diagnostics and treatment of most common diseases. Preventive measures in diseases of various organs and body systems of animals.

Optional disciplines chosen by students	Semester	Credits
Peculiarities of diseases of horses, their diagnostics and treatment using up-to-date drugs	2	3,0
Peculiarities of diseases of ruminants, their diagnostics and treatment using up-to-date drugs	2	3,0
Peculiarities of swine diseases, their diagnosis and treatment using up-to-date drugs	2	3,0
Total		**9,0**

Proposed topics for masters' papers:

1. Diagnostics and preventive measures against ketose of productive cows.
2. Diagnostics, treatment and prevention of hepatodystrophy in horses. Diagnostics, therapy and prevention of mineral metabolic imbalance in sows.

Master programme

TREATMENT AND PREVENTION OF SURGICAL DISEASES OF ANIMALS

Peculiarities of treatment and prevention of most common surgical diseases of farm animals, small animals (dogs and cats). Traumatology, orthopedics, dentistry and ophthalmology.

Optional disciplines chosen by students	Semester	Credits
Traumatology	2	2,0
Orthopedics	2	3,0
Stomatology	2	2,0
Phthalmology	2	2,0
Total		**9,0**

Proposed topics for masters' papers:

1. Current methods of diagnostics and treatment in orthopedics and traumatology of farm and small animals.
2. Current methods of diagnostics and treatment of dental diseases in animals.
3. Treatment and prevention of eye diseases in animals.
4. Treatment and prevention of surgical infections in animals.

Master programme

CLINICAL PATHOLOGICAL ANIMAL PHYSIOLOGY

Study and analysis of the nature of functional disorders of vital organs of animals at each stage of the disease and identification of relationship of pathogenesis of the disease and its clinical presentations. Study of etiology and pathogenesis of immune reactivity disfunction in animals. Study of etiology, pathogenesis of basic metabolic imbalance in farm animals and substantiation of pathogenetic therapy.

Optional disciplines chosen by students	Semester	Credits
Common pathological processes	2	3,0
Typical pathological processes, metabolic imbalance in animals	2	3,0
Clinical pathological physiology of organs and body systems	2	3,0
Total		**9,0**

Proposed topics for masters' papers:

1. Etiology, pathogenesis and substantiation of pathogenetic therapy of metabolic imbalance in animals.
2. Peculiarities of pathogenesis of infection and substantiation of antibacterial and pathogenetic therapy.
3. Peculiarities of pathogenesis and presentation of congenital immunodeficiencies in animals.

Master programme

PREVENTION AND REHABILITATION OF ADVERSE FARMS WITH INFECTIOUS DISEASES

Principles, methods and means of diagnostics of infectious and invasive diseases of animals, planning and organization of preventive measures and rehabilitation of adverse farms susceptible to infectious diseases.

Optional disciplines chosen by students	Semester	Credits
Epizootology and infectious animal diseases	2	3,0
Parasitology and invasive animal diseases	2	3,0
Organization and economics of veterinary	2	3,0
Total		**9,0**

Proposed topics for masters' papers:

1. Planning, organization and economics of veterinary measures against infectious and invasive diseases of animals in specific sector.
2. Diagnostics, therapy and prevention of invasive diseases of productive animals.
3. Diagnostics, therapy and prevention of infectious diseases of productive animals.
4. Antiepizootic measures against infectious diseases.

Master programme

VETERINARY-SANITARY EXPERTISE AND SANITARY EVALUATION OF LIVESTOCK PRODUCTS

Master programme aims to develop skills in sanitation research and identification of veterinary and sanitary quality of food raw materials and technical raw materials of animal origin. Veterinary-sanitary expertise covers the following main sections: meat (morphological and chemical composition, veterinary and sanitary rating of products after animal slaughter in case of invasive diseases), fish and fish products, bacteriological investigation of meat and meat products .

Optional disciplines chosen by students	Semester	Credits
Meat, its chemical and morphological composition, biological value and commodity rating	2	3,0
Veterinary-sanitary expertise and sanitary evaluation of livestock produxts in case of invasive diseases	2	3,0
Veterinary-sanitary expertise and sanitary evaluation of poultry products after slaughter with infectious diseases. Veterinary-sanitary expertise and sanitary evaluation of technical raw materials	2	3,0
Total		**9,0**

Proposed topics for masters' papers:

1. Microstructural analysis of minced meat, ravioli, prepared raw material, smoked meat products, which come into the market of Crimea.
2. Characteristics of industrial sea fish, which come into the market for heavy metal content.
3. Monitoring of heavy metals in livestock products.

Master programme

OBSTETRICS, GYNECOLOGY AND BIOTECHNOLOGY OF FARM ANIMALS BREEDING

Peculiarities of treatment and prevention of most common obstetric and gynecological diseases of farm and small animals. Obstetrical and gynecological clinical examination.

Optional disciplines chosen by students	Semester	Credits
Operative obstetrics	2	2,0
Gynecology	2	3,0
Obstetrical and gynecological clinical examination	2	2,0
Andrology	2	2,0
Total		**9,0**

Proposed topics for masters' papers:

1. Current methods of diagnostics and treatment of endometritis in farm and small animals.
2. Current methods of diagnostics and treatment of mastitis in farm animals.
3. Peculiarities of obstetric and gynecologic clinical examination of farm and small animals.

Master programme

PATHOLOGICAL ANATOMY, AUTOPSY AND FORENSIC VETERINARY

Study of morphological changes with different pathology and sanogenesis and thanatogenesis. Legal aspects of activity of veterinary surgeon, forensic veterinary expert. Methods of forensic veterinary autopsy of animals and selection of materials for criminalistics laboratory research.

Optional disciplines chosen by students	Semester	Credits
Necropsy (of poultry, large and small cattle and pigs)and pathomorphological diagnostics of diseases.	2	3,0
Pathohistological diagnostics of infectious and internal diseases.	2	2,0
Forensic veterinary autopsy	2	3,0
Professional offense and responsibility	2	1,0
Total		**9,0**

Proposed topics for masters' papers:

1. Pathomorphological characteristics of diseases in bovine ketosis.
2. Methods of forensic expertise of surgical manipulations.
3. Methods of determination the causes of sudden death.

RESEARCH SPECIALIZATION

Optional disciplines chosen by university	Semester	Credits
Information technology in veterinary	1	1,5
Higher education and the Bologna Process	1	1,0
Total		**2,5**

Master programme

CURRENT METHODS OF DIAGNOSTICS, TREATMENT AND PREVENTION OF INTERNAL DISEASES

Principles, means and methods of general diagnostics, therapy and prevention of productive animal diseases using remote control and digital devices and nanotechnologies.

Optional disciplines chosen by students	Semester	Credits
Diseases of young animals	2	2,0
Diseases of horses	2	2,0
Diseases of ruminants	2	3,0
Diseases of pigs	2	2,0
Total		**9,0**

Proposed topics for masters' papers:

1. Elaboration of measures of diagnostics and prevention of mastitis in cows.
2. Group treatment and prevention of non-contagious diseases of young animals.
3. Diagnostics, therapy and prevention of productive animal diseases using nanotechnologies.

Master programme

CURRENT LABORATORY METHODS OF EVALUATING THE IMMUNE STATUS OF PRODUCTIVE ANIMALS

Explore classical and up-to-date immunological methods, means and methods for indication of immunocompetent cells and induced antibodies, evaluation of immunodeficiency of productive animals and ways of its correction. Current data of laboratory diagnostics of immune status of animals.

Optional disciplines chosen by students	Semester	Credits
Principles of immunobiology	2	2,0
Diagnostics and correction of immune status of animals	2	7,0
Total		**9,0**

Proposed topics for masters' papers:

1. Correction of the immune status of productive animals using immunomodulators.
2. Laboratory diagnostics of immunodeficiency of productive animals.
3. Effect of probiotic preparations on the immune status of productive animals.

Master programme

ECOLOGICAL MORPHOLOGY

Ecological morphology explores general biological principles of animal body structure. It is a core discipline in training masters-scientists specializing in “Veterinary medicine”. The discipline provides research into methodological principles of devices and systems and structure of animal body taking into consideration species, breed and age factors influenced by environmental factors.

Optional disciplines chosen by students	Semester	Credits
Methodology and general biological principle of ecological morphology	1	2,0
Ecological morphology of soma, its connection with hemoimmunoparesis	1	2,0
Ecological morphology of integrating visceral devices and systems	2	3,0
Ecological morphology of birds and newborn animals and forecasting of their adaptation genesis to the environment	2	2,0
Total		**9,0**

Proposed topics for masters’ papers:

1. Peculiarities of morphogenesis of central and peripheral organs of hemoimmunoparesis of animals raised in conditions of different motion activity.
2. Impact of housing conditions of newborn animals on morphofunctional status of parenchymatous organs.
3. Impact of housing conditions of newborn animals on morphofunctional status of tubular organs.
4. Peculiarities of somatic, visceral and integrating systems of poultry in current housing conditions.

RULES AND TERMS OF ADMISSION

Applicants for relevant educational and professional training programmes are to submit to Admission Committee the following documents:
- application addressed to the Rector;
- certificate of received education and qualification level and an annex - original or certified copy;
- 5 photos size 3 × 4 cm;
- referral-recommendation (for admission on research specialization);
- copy of identification number;
- application by the enterprise, organization or institution for graduate employment or target referral (for full-time training under state order);
- vidimus from the work record card (training by correspondence under state order).

Passport and the original document of received education and qualification level and the annex are to be submitted in person.

Forms and terms of training:
full-time ..... 1-1,5 year
by correspondence ..... 1,5-2 years

Additional information about admission terms and rules can be obtained on the following address:

***Admission Committee of NULES of Ukraine*:**
19, General Rodimtsev str., Kyiv, Ukraine, 03041
tel: (044) 527-83-08, 258-42-63
e-mail: commission@twin.nauu.kiev.ua

NULES of Ukraine e-mail: http://www.nubip.edu.ua

***Master programmes centre of NULES of Ukraine*:**
15, Geroiv Oborony str., Kyiv, Ukraine, 03041
tel/fax: (044) 527-85-26
e-mail: magystr_dep@twin.nauu.kiev.ua
NULES of Ukraine e-mail: www.nubip.edu.ua/node/1027

Admission Committee of SB NULES of Ukraine "CATU":
urban settlement Agrarne, Simferopol, Ukraine, 95492
(educational building 1, room 139)
tel.: (0652) 26-31-45
e-mail: prcom61@mail.ru.