

Cabinet of Ministers of Ukraine

MASTER DEGREE PROGRAMMES

**offered
by National University
of Life and Environmental Sciences
of Ukraine**

**Development strategy, directions of training,
specialties, specializations, faculties
and material- technical resources**

Kyiv – 2012

Editorial board of the publication

Dmytro O. Melnychuk – Chief editor

Vitaliy P. Lysenko

Maksym D. Melnychuk

Sergiy D. Melnychuk

Oksana V. Zazymko

Larysa V. Klikh

Andrii M. Bilous

Anatoliy M. Hladkyi

Olena I. Barabash

Ruslan I. Sopivnyk

Oksana B. Stankevych

Academic curricula and programmes for training students at the Educational-Qualification Level (EQL) "Master" meet the requirements of the Law of Ukraine "On Higher Education" and passed the expertise of their harmonization and meeting requirements of the American and European systems of higher agricultural education recognized by Memoranda of Understanding with the Universities: USA – Iowa State University (Aimes; May 1996; June 1998, October 2011), Louisiana State University (Baton Rouge; August 1998, April 2009), DePaul University (Chicago; September 2005); Belgium – Ghent University (Ghent; September 2002); Germany – Humboldt University (Berlin; September 2002), Weihenstephan University of Applied Sciences (Trisdorf; April 2005), Anhalt University of Applied Sciences (Bernburg; October 2006); Netherlands – Wageningen University (Wageningen; October 2006).

Content

Introduction

List of abbreviations

1. General statements
2. Directions of Master Programmes at National University of Life and Environmental Sciences of Ukraine (NUBiP of Ukraine)
3. Principles of the formation of programmes and curricula of Master's training
4. System for attestation of the Master training
5. Part-time and external forms of studies and second higher education at NUBIP of Ukraine Master Training
6. Admission to Master Degree at NUBiP of Ukraine
7. Characteristics of the teaching staff provision for the education, research and scientific-innovative activities and basis of Master student practical training at NUBiP of Ukraine
 - 7.1. University Staff
 - 7.2. Educational Work
 - 7.2.1. Kyiv Territorial Center of NUBiP of Ukraine
 - 7.2.2. Regional Higher Educational Establishments
 - 7.3. Bases for Student Practical Training
 - 7.3.1. International programmes for Student Practical Training
 - 7.4. Scientific-Research Work
 - 7.5. Scientific-Innovative Activity at NUBiP of Ukraine
 - 7.6. Information-Telecommunication and Information-Consultative Provision at NUBiP of Ukraine
 - 7.7. Cultural-Education Activity at NUBiP of Ukraine

Dear Entrants, Students and Colleagues!

This short edition is a lay out of the National Agricultural University's strategy for training Master students – professionals of the new generation, who have to provide significant increase of the biological resources, meet challenges of increasing food quality and safety in our State, significantly improve environmental situation, welfare, intellectual level and democracy in our society.

Having substantial experience in communication with colleagues from many leading world universities, I want to emphasize, that Master School is one of the determinant factors of the University authority. That is why studying in Master School at many leading world universities costs thousands of American dollars per year.

In my opinion, this university level of education together with PhD School, is the crucial factor for the level of scientific-technical progress in a country and favors development of high spirituality, increase of intellect and prosperity in society. All the above mentioned is achieved by the philosophy of Master studies: unification of knowledge, skills and continuous readiness to the immediate reaction on fast going today and future challenges of life, including emergency. All these things cause the need in high flexibility of the Master Programme, their ability to help people to recognize in any fact its macro-and micro consequences and develop highly effective business schemes, foresee global changes in nature and society, educate political and state leaders out of these young people, etc. That is why, while fulfilling Master Programmes by the responding content, we have to remember that they form ability of the future experts for the global view of place and role of profession obtained in the society, provide opportunity for comparative analysis of achievements reached in Ukraine with those in the world and be successful in searching means for their bringing to the international level. At the same time it is important to enrich the content of education by issues related with nature protection, economics and law components, understand deeply international standards and technologies, raw materials, and final products, etc.

For skeptics, who are afraid of Americanization or Europeanization of the Ukrainian higher school, I would like to say, that the issue is about its first formed ukrainization. Our ancestors were training Bachelors and Masters in the times of the Kyiv-Mohyla Academy (XVII century). Such a training was conducted in the following years on the territory of Ukraine and Russia up to 20s of the past century. So, as it appears, we are coming back to our sources.

All the mentioned requires not only substantial professional training from us, but also knowledge of foreign languages and Mastering modern information and telecommunication components (computer and geoinformation technologies), that creates a background for entering into the world information network and gives opportunity for everybody to use world information resources, including those, who are occupied directly in the production sphere and do not have higher education.

Under such conditions only reformation of higher education system will bring success. If it would happen that our present academic programmes for training "Specialists" would be just transformed into Master programmes, then we will face com-



plete discreditation of the started reforms – we will join to the third world with the adequate attitude to us from the highly developed countries.

Hoping that this won't happen, I would like to caution, that not all education and scientific institutes, training scientific centers and department chairs of the University are ready to fulfill Master training immediately in the way correspondent to the international requirements. Thus it is better for them not to do that, and to continue training highly qualified Bachelors and Masters and gradually get prepared to train Masters in separate directions. This principle can be seen in the USA, where separate Universities train only Bachelors or Bachelors and limited number of Masters. Other category of the Universities – Education and Research – train Bachelors, Masters and PhDs, and so called research Universities train mainly Masters and PhDs, conduct improving of specialists' qualification and train just small number of Bachelors. The last ones do considerable scientific-research and innovative work. Something similar we can observe in Germany, where there are Universities and so called higher schools – higher specialized schools with the period of studying of 4-5 years (the strongest of which are now being renamed into Universities of Applied Sciences). These establishments train specialized engineers mainly for future employment in industry. They do not have postgraduate schools, as the way to science, pedagogics and management spheres goes through Universities with famous scientific schools only.

In recent 10 years NUBiP of Ukraine has developed widespread structure throughout Ukraine, which provides continuity of the level education from junior specialist (in technical schools and colleges) to bachelor → specialist (in Institutes) → Master → PhD → Full Doctor Degree (in Kyiv territorial center of NUBiP of Ukraine and in the Southern Affiliate "Crimean Agro-Technological University" NUBiP of Ukraine).

Nowadays National University of Life and Environmental Sciences of Ukraine is world known self-governed educational establishment with high level of research activity (it has more than 40,000 students in 29 directions and 43 specialties, and more than 600 postgraduate students, doctorate students). It has 14 functioning Scientific-Research Institutes and Stations, range of scientific-innovative departments, etc. It gave our University an opportunity to become recognized by the international academic community of agroindustrial, natural, biotechnological and nature protection domain as such, that meets the international requirements, concerning quality of education, research and innovation systems.

Analyzing the passed 20 years of reformation in the main activities of the National University of Life and Environmental Sciences of Ukraine, I want to express my gratitude to the colleagues and government of the state, and to underline that our success is based on the correctly selected strategy at the beginning of 1990s, which foresaw the following stages:

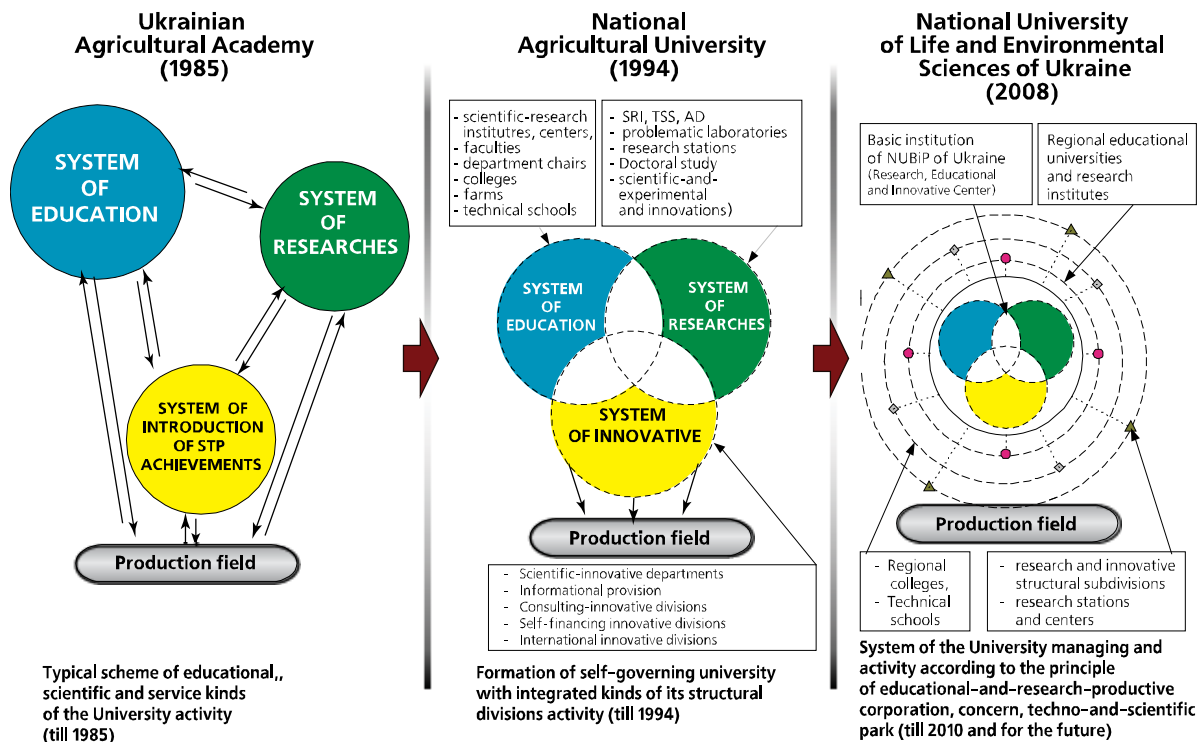
- 1) Studying the system of education of the leading world universities, development on this basis of the modernized academic curricula and programme, respective methodological provision on the state language, creation of the autonomous self-governed university and recognition in the final system of education at NUBiP of Ukraine as such, being adequate to the education systems of the best universities in the World;
- 2) Development of the research component of NUBiP of Ukraine activity through creation of the respective scientific departments (Scientific-Research Institutes and Stations, problem scientific laboratories, etc.); the evidence of high level of

science linkage in the University activity is the fact that in the structure of its budget 25% goes to science and research.

- 3) Development of the innovative component in the University activity through creation of the respective innovative structures; this stage started 4-5 years ago, and it has in the structure of University budget 10% but with powerful dynamics.

We can display stages of our University development by the following illustration:

Strategy of activity and development of NUBiP of Ukraine



Everything we managed to achieve during the last 20 years indicates the well selected way of reforms. Now we are looking into the future with confidence, and that is why we are inviting dear university entrants, colleagues and friends to our prominent University to study, improve qualification, for joint projects and just to have a pleasant visit.

Respectfully Yours,

**Rector of National University of Life and Environmental Sciences of Ukraine,
Full member of National Academy of Science of Ukraine
and Ukrainian Academy of Agrarian Sciences,
The Hero of Ukraine**

Dmytro O. Melnychuk

LIST OF ABBREVIATIONS

- NUBiP of Ukraine** – National University of Life and Environmental Sciences of Ukraine
- SA "CATU" of NUBiP of Ukraine** – Southern Affiliate "Crimean Agro-Technological University" of the National University of Life and Environmental Sciences of Ukraine
- ESI** – Education-Scientific Institute
- TSC** – Training-Scientific Center
- ITSC** – Interinstitutional Training-Scientific Center
- SRI** – Scientific-Research Institute
- SRF** – Scientific-Research Farm
- SD** – Separate Department (University Enterprises)
- ATI** – Agro-Technical Institute
- CE** – College of Economics
- ATC** – Agro-Technical College
- AC** – Agricultural College
- CEM** – College of Economics and Management
- CLD** – College of Landscape and Design
- CENR** – College of Ecology and Nature Resources
- THMA** – Technical School of Hydromelioration and Mechanization of Agriculture
- Crimean AIC** – Crimean Agro-Industrial College
- TRBPF** – Teaching-Research Breeding Poultry Factory
- MESU** – Ministry of Education, Science, Youth and Sport of Ukraine
- HEE** – Higher Educational Establishment
- EQL** – Education-Qualification Level
- EPP** – Education-Professional Programme
- SAC** – State Accreditation Committee
- EMC** – Education-Methodological Committee
- HAC** – Higher Attestation Commission
- AMS of Ukraine** – Academy of Medical Sciences of Ukraine
- NAS of Ukraine** – National Academy of Science of Ukraine
- UAAS** – Ukrainian Academy of Agrarian Sciences
- UAPS** – Ukrainian Academy of Pedagogical Sciences
- IMEA** – Institute of Mechanization and Electrification of Agriculture
- UkrSRIFPTT** – Ukrainian Scientific-Research Institute of Forecasting and Probation of Technics and Technologies
- AIC** – Agro-Industrial Complex
- STP** – Scientific-Technical Progress
- Ltd.** – Limited liability company
- SPF** – System of Precision Farming
- FAO of UN** – World Food and Agriculture Organization of the United Nations
- CS** – Cattle Stock
- IT** – information Technologies

1. GENERAL STATEMENTS

Training Masters at the National University of Life and Environmental Sciences of Ukraine (NUBiP of Ukraine) is conducted in directions and specialties, determined by the respective permission documents and is based on the Law of Ukraine "On Higher Education", "Statement on Education-Qualification Levels (level education)", approved by the Resolution of the Cabinet of Ministers of Ukraine of January 20, 1998, №65, "Statement on Admission Procedure for Master Programmes in specialty "State Service (Public Administration)" in education domain "State Management" and employment of graduates", approved by the Resolution of the Cabinet of Ministers of Ukraine of July 29, 2009, №789, Orders of the Ministry of Education, Science, Youth and Sport of Ukraine of October 19, 2006, №7 10 "On Masters Training at the National Agricultural University of Ukraine"; of February 2, 2007, №76 "On Masters training at the National University of Life and Environmental Sciences of Ukraine"; of June 20, 2007, №523 "On training professionals at the Master Education-Qualification Level after experimental programmes at the National University of Life and Environmental Sciences of Ukraine"; of July 09, 2007, №586 "On training professionals at the Master Education-Qualification Level after experimental programmes in specialty "Pedagogics of Higher School" at the National University of Life and Environmental Sciences of Ukraine; of August 20, 2007, №754 "On training professionals at the Master Education-Qualification Level after experimental research programmes", as well as Memoranda of Understanding and Recognition of Systems of Education signed between NUBiP of Ukraine and such Universities: USA – Iowa State University (Aims; May 1996; June, 1998, October 2011), Louisiana State University (Baton Rouge; August, 1998, April 2009), Pennsylvania State University (April, 1992), DePaul University (Chicago; September, 2005); Belgium – Ghent University (Ghent; September, 2002); Netherlands – Wageningen University (Wageningen; October, 2006); Germany - Humboldt University (Berlin; September, 2002), Weihenstephan University of Applied Sciences (Trisdorf; April, 2005), Anhalt University of Applied Sciences (Bernburg; October, 2006), the Netherlands - Wageningen (Wageningen, October 2006).

"Master" is EQL of a person who based on Bachelor or Specialist EQL, obtained full higher education, special skills and knowledge enough to perform professional tasks and obligations of the innovative character for the certain level of the professional activity, that are foreseen for initial positions.

People studying in Master Degree Programmes, are students, except those, studying in the specialty "State Service (Public Administration)". The last ones are audience according to the Resolution of the Cabinet of Ministers of Ukraine of July 29, 2009, № 789.

Training Masters at NUBiP of Ukraine is conducted according to the List of directions and specialties, approved by the Resolution of the Cabinet of Ministers of Ukraine of May 24, 1997, №507, and organization of the education process is provided with the help of the following notions:

- Specialty
- Specialization
- Education-Professional Programme
- Master Programme
- Individual Working Plan
- Master Thesis
- Training-Scientific Center

Licensed Direction – direction, according to which the educational establishment obtained the right to conduct education activity, connected with obtaining basic higher education and qualifications.

Licensed Specialty – specialty of the corresponding EQL, according to which the educational establishment obtained the right to conduct education activity, connected with obtaining full higher education and qualification within definite direction of training.

Specialization – component of the higher education standard of NUBiP of Ukraine, that is determined by the content of optional disciplines, that provides direction for training professionals for their further work in the spheres of production, research, teaching, management, expert-control activity and state management.

Education-Professional Programme (EPP) – component of the branch standard, that determines normative term and normative part of the definite specialty(direction), establishes requirements to its content, scope and level of education and professional training of experts. Fulfillment of this programme permits obtaining of the respective document of the state model about education.

Individual Working Plan of the students or learners of Master programs is the plan for the whole period of study in which he (she) presents the subject of Master paper, its substantiation, teaching, research and innovative work and which are approved by the head of the department, the dean, the directors of TSC, director of the Master programs center and are approved by the director of ESI after discussing them at the Academic Board of ESI.

Master Programme (as a generalized name of the education-scientific-production issue) – name of the content for the education on the level of requirements to training Masters. Master Programme can go beyond the framework of one specialty.

Master Thesis – independent qualification work with the research and innovation elements as a summary of the theoretical and practical training in the framework of normative and optional components of the EPP for training Masters. Fulfillment and defending of such a thesis is a final stage of studies in Master Programme and one of the main forms of state attestation.

Training-Scientific Center (TSC) – structural subunit of NUBiP of Ukraine, that unites similar department chairs and which has the following tasks:

- Coordination of department chairs activity concerning Mastering features of the future Master specialties and specializations by the students at the Bachelor (after graduating the first year of studies at the Bachelor EPP, students on the competition base determine future direction of Master training and are assigned to the appropriate Training-Scientific Centers for further work)
- Development of the education content and organization of the academic process for students (audience) of the Master Programme
- Organization of employment for Master graduates in chosen specialty and specialization
- Scientific supervisor of the Master thesis is appointed by the University Rector's order among the most experienced scientific-pedagogical workers (doctors or PhDs) at the recommendation of the Director of the Educational-Scientific Institute (ESI).

For specialty "State Service (Public Administration)" scientific supervisors of the Master thesis can also be highly qualified professionals of the central executive bodies, local state administrations and self-governing bodies.

Master student, that have met all the requirements of the academic curricula and defended Master thesis, obtains Master Degree and Diploma in the chosen specialty (specialization) by the resolution of the state examination commission. Annexes to Master Diploma indicate specialization of the Master training, studied academic disciplines and topic of the Master thesis.

2. DIRECTIONS OF MASTER PROGRAMMES AT NATIONAL UNIVERSITY OF LIFE AND ENVIRONMENTAL SCIENCES OF UKRAINE

Master training is performed at the Basic Institution (BI) of NUBiP of Ukraine (Kyiv) and its Southern Affiliation "Crimean Agro-Technological University" (SA NUBiP of Ukraine "CATU") for activities in such spheres of national economy:

- agricultural production;
- forestry and landscape architecture;
- fishery;
- biotechnologies and bioresources;
- protection and sustainable development of land, forest and water resources;
- processing, storage and transportation of agricultural, forestry and food raw materials, final products, etc.;
- food technologies;
- agricultural and forestry machinery-, power- and technical provision in agro-, forestry-, fishery and nature protection complexes, alternative power sources;
- rural building and architecture;
- veterinary medicine, veterinary-sanitary expertise;
- ecology, ecological expertise, ecobiotechnology and genetic engineering;
- quality, certification and standardization of technologies, natural and produced raw material, agricultural and food products and defining of environment state;
- social development of rural territories and social pedagogics;
- economics, management, marketing, etc.;
- computer sciences, informational and telecommunication systems;
- state administration;
- legislative provision of agricultural business, functioning of agroindustrial and nature protection complexes in the sphere of land resources and development of rural territories;
- research in scientific structures on the questions of natural, agricultural, food, veterinary, biological, chemical, economical, law, social, technical and nature protection sciences, etc.;
- pedagogics (teaching of special disciplines at educational establishments of the I-II level of accreditation).

Training Masters in NUBiP of Ukraine is performed in 43 specialties (Table 2.1). Within each specialty a number of Master programs (almost 300 programs) is envisaged.

Table 2.1. *List of specialties in which Master training at Kyiv Basic Institution of NUBiP of Ukraine and Southern Affiliate of NUBiP of Ukraine "Crimean Agro-Technological University" is performed*

Code and name of the knowledge branch and code and name of specialty	Place of Specialists Training	
	Basic Institution	SA NUBiP of Ukraine "CATU"
1	2	3
0101 – Pedagogic Education		
8.01010601 – Social Pedagogics	+ (f, e)	–
0304 – Law		
8.03040101 – Law Study	+ (f)	–

1	2	3
0305 – Economics and Enterprise		
8.03050201 – Economic Cybernetics	+ (f, c, e)	–
8.03050401 – Economics of Enterprise	+ (f, c, e)	–
8.03050701 – Marketing	+ (f, c, e)	+ (f, c, e)
8.03050801 – Finance and Credit	+ (f, c, e)	+
8.03050803 – Taxation	+ (f, c, e)	+ (f, c, e)
8.03050901 – Accounting and Audit	+ (f, c, e)	–
0306 – Management and Administration		
8.050201 – Management of Enterprises	+ (f, c, e)	+ (f, c, e)
8.050206 – Management of Foreign Economic Activities	+ (f, c, e)	–
0401 – Natural Sciences		
804010601 – Ecology and Environment Protection	+ (f, c, e)	–
0501 – Informatics and Computer Technologies		
8.05010101 – Information Control Systems and Technologies	+ (f)	–
0502 – Automation and Control		
8.05020201 – Automated Control of Technological Processes	+ (f, c, e)	–
0505 – Engineering and Materials Processing		
8.05050303 – Forest Complex Equipment	+ (f, c, e)	–
8.05050312 – Machines and Agricultural Equipment	+ (f, c, e)	–
0507 – Electrical Machinery and Electric Mechanics		
8.05070103 – Electrotechnical Systems of Consumption	+ (f, c, e)	–
0514 – Biotechnology		
8.05140105 – Ecological Biotechnology and Bioenergetics	+ (f, c, e)	–
0517 – Food Industry and Processing of Agricultural Production		
8.05170102 – Technologies of Fats and Fat Substitutes	–	+ (f)
9.05170104 – Technologies of Meat Preservation, Conservation and Processing	+ (f, c, e)	
8.05170105 – Technologies of Water Bioresources preservation and processing	+ (f, c, e)	
8.05170106 – Technologies of Brewing Products and Viniculture	–	+ (f)
0518 – Wood Processing		
8.05180101 – Woodworking Technologies	+ (f, c, e)	–
0701 – Transport and Transport Infrastructure		
8.07010102 – Organization of Shipment and Management in Transport	+ (f)	–
8.07010104 – Organization and Regulation of Traffic	+ (f)	–
0801 – Geodesy and Land Utilization		
8.08010103 – Land Utilization and Cadastre	+ (f, c, e)	+ (f, c, e)
1304 – Agriculture and Forestry		
8.09010101 - Agronomy	+ (f, c, e)	+ (f, c, e)
8.09010102 – Agrochemistry and Soil Science	+ (f, c, e)	–
8.09010104 – Fruit and Vegetable Study and Viticulture	+ (f, c, e)	+ (f, c, e)
8.09010105 – Selection and Genetics of Agricultural Crops	+ (f, c, e)	–
8.09010201 – Technologies of Production and Processing of Animal Products	+ (f, c, e)	–
8.09010301 – Forestry	+ (f, c, e)	–
8.09010303 – Landscape Architecture	+ (f, c, e)	–
8.09010501 – Plant Protection	+ (f, c, e)	–
0902 – Fishery and Aquaculture		
8.09020101 – Water Bioresources	+ (f, c, e)	–
1001 – Machinery and Energy Power of Agrarian Production		
8.10010101 – Energy Power of Agricultural Production	+ (f, c, e)	–
8.10010103 – Electrification and Automation of Agriculture	+ (f, c, e)	–
8.10010203 – Mechanization of Agriculture	+ (f, c, e)	+ (f, c, e)
1101 – Veterinary Sciences		
8.11010101 – Veterinary Medicine	+ (f, c*)	+ (f, c, e)
1501 – State Administration		
8.15010005 – State Service	+ (f*, c*, e*)	–
1801 – Specific Categories		
8.18010010 – Quality, Standardization and Certification	+ (f, c, e)	–
8.18010018 – Administrative Management	+ (f, c, e)	–
8.18010020 – Management of Educational Establishment	+ (f)	–
8.18010021 – Pedagogics of Higher School	+ (f, c, e)	–
Note: + - Training is performed; - - Training is not performed; F - Full-time Education; P - Correspondent Education; E - External Studies; * - only on the basis of full higher education		

P.S. Detailed description of Master programmes and plans in NUBiP of Ukraine is placed in special catalogues on the site www.nubip.edu.ua

Nowadays more than 5,000 students and Master students study in Master programmes of NUBiP of Ukraine. Dynamics of student number growth is shown on the Figure 2.1.

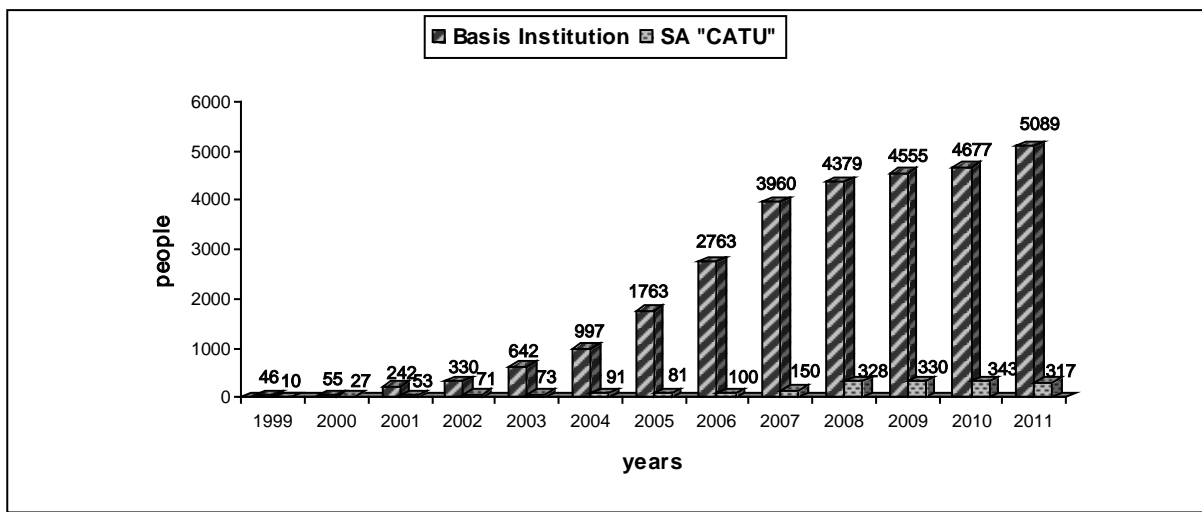


Fig 2.1. Dynamics of student number growth (Master students) at NUBiP of Ukraine by the years

Specialists' training according to Master programs at NUBiP of Ukraine is characterized by the closest link between the education content to the sphere of employment of the programs graduates.

Specialization (direction) of Master programmes at NUBiP of Ukraine is committed in the frames of correspondent specialties and is defined by:

- specialization (production and research ones);
- field of knowledge "Specific categories" in specialties "Pedagogics of High School", "Quality, Standardization and Certification", "Administrative Management", "Management of Educational Establishment");
- field of knowledge "State Administration" in specialty "State Service").

Master programs in NUBiP of Ukraine are formed within corresponding specialties and are defined by:

- sphere of future employment of Master programs graduates: production, pedagogical, expert-and-control and managerial ones (see Fig. 2.2);
- the concrete content of the specialist activity in each of the above mentioned fields.

Such classification of directions (specializations) of Master training is established as the basic one from the experience of the USA Penn State University, which is one of the most authoritative universities of this country and number of other universities in the USA and Europe.

Content of specializations within Master programme is defined in every concrete situation by the parties' agreement: "NUBiP of Ukraine – employer – Master student".

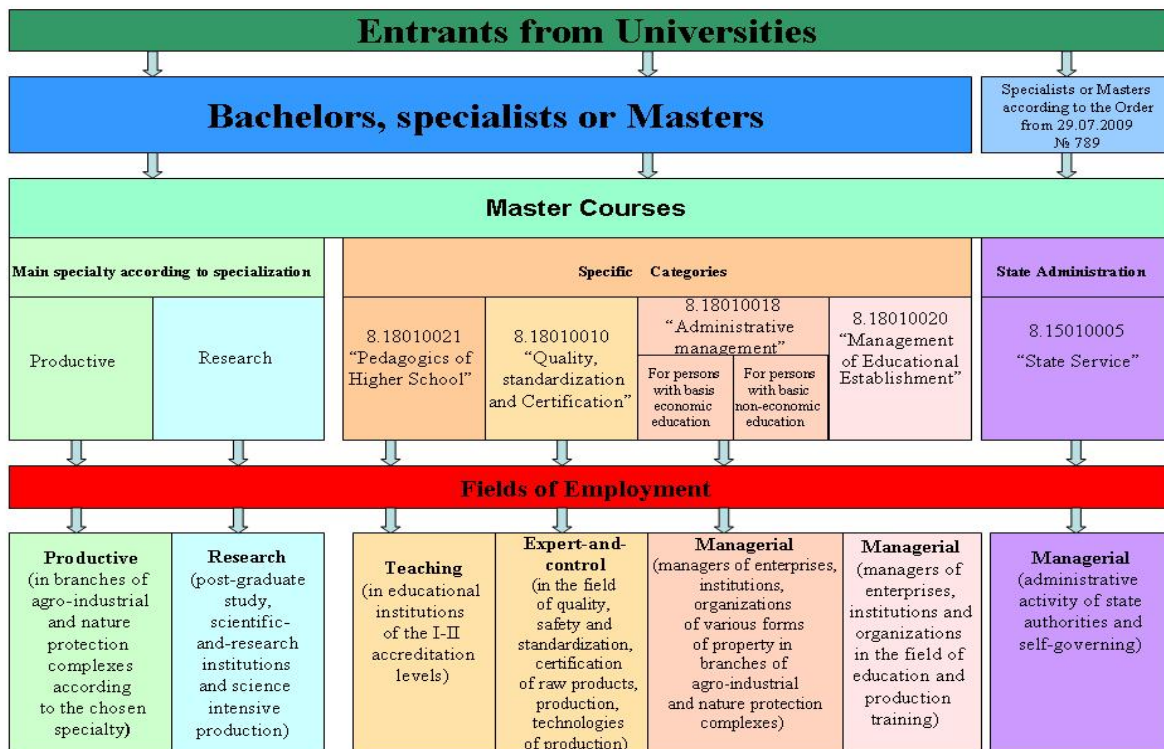


Fig. 2.2. Fields of employment of Master programmes graduates

Programmes of Production Direction in Master Training are elaborated by the correspondent TSC and graduating department chairs and are approved by the Scientific Council of ESI (with the coordination of Academic Department of NUBiP of Ukraine as to the correspondence to state education standards).

Number of Masters in these programmes is defined by the Scientific Council of NUBiP of Ukraine according to submission of ESI and statements (agreements) of employers.

The right of TSC (department chairs) to train Masters at production direction, term of education, education programmes are regulated by respective regulations which are approved by Rector of the University.

For the programs of production specialization according to the results of entrance exams the persons are admitted who have studied and have the intention to continue studying within the frames of the chosen training direction for in-depth specialization in the chosen specialty. Those programs are implemented with the aim of ensuring production science-intensive sphere by highly-qualified specialists who have command of innovative knowledge and are able to implement them into modern highly-effective technologies.

Production Direction of Master Training envisages advanced learning of particular fundamental and applied disciplines (at the choice of University and student). Studying at such programme is performed at the scheme 4 (bachelor studies) + 1(2) (Master studies) depending on form of education and chosen specialty. For specialty "Veterinary Medicine" training of Masters is performed at the scheme 4 +2, 5 + 1(2) or 6 + 0.

Formation of the content of these programmes began at NUBiP of Ukraine since 1990. System of Master training at the USA universities was adopted as a basic one.

Collaboration of our university representatives with colleagues from Iowa, Pennsylvania, Louisiana, Indiana, Ohio, California, Nebraska, North Dakota States, De Paul (Chicago), Yale University (Connecticut State), etc. have ended with signing of the memoranda about mutual recognition of Master education system.

During last years University has carried out and is now continuing to fulfill large work concerning mutual agreement on Master programmes and elaboration of common projects with universities of Great Britain, Germany, Belgium, Holland, Austria, Italia, France, Czech Republic, Poland, Bulgaria, Slovakia, Japan, China, South Korea, and signed corresponding official agreements.

The important peculiarity of Master degree programmes of production direction is their practical compound which first of all foresees intensive usage of university practice bases (scientific-research farms, stations and centres, etc.). Farms of many famous firms are used (see Chapter 7.3).

Research Programmes of Master Training are elaborated and implemented only within department chairs of the University, which have permission of Ministry of Education and Science of Ukraine for postgraduate students training and reached considerable success in scientific-research work. List of department chairs, which train Masters-researchers is shown in the Table 2.2. In the Annexes to the document about education (diploma) of graduates of such programmes graduating department chairs, Mastered disciplines and Master theses subjects are represented.

Master degree graduates of research direction at NUBiP of Ukraine are similar to graduates of analogous scientific specialties at foreign universities who receive diploma "Master of Science".

Names and content of graduate Master works of research direction are defined by the content of scientific-research works of respective Education-Scientific Centre (department chair) and are agreed by scientific councils of corresponding TSC and Scientific-Research Institutes (SRI) and are approved by the Scientific Council of ESI (by coordination of Academic Department and Scientific Council as well as the Master Programs Center of the University). Entrants in such Master Degree Programmes should know very well Ukrainian, Russian and at least one foreign language: English, German, French, Japan, Chinese. Bases for practical training of Master students of such directions are respective SRI of NUBiP of Ukraine, SRI of National Academy of Science of Ukraine and UAAS, TSC, research stations, problem laboratories and knowledge-based industry.

Characteristics of research of Master degree programmes at the department chairs, where natural-scientific disciplines are lectured, is that entrants for these programmes can be the following:

- bachelors of NUBiP of Ukraine and other Higher Educational Establishments (HEE) of agricultural and nature protection type, that showed themselves as active participants in research during their studies at bachelor education-professional programmes and have recommendations of scientific council of respective ESI (or HEE) for continuation Master studies at Research Master Degree Program;
- bachelors of corresponding directions of training (specialties) of classical universities for those scientific-research department chairs which train postgraduate students in such areas: general chemistry, analytical and bioinorganic chemistry and water quality; general and biological physics; animal biochemistry, quality and safety of agricultural products named after academician M. Gulyi; animal physiology, pathophysiology and immunology; microbiology, virology and biotechnology; general zoology and ichthyology; ecology of agrosphere;

- and ecologic control; radiobiology and radioecology; molecular genetics and biosafety; plant physiology, ecology and biomonitoring; entomology; botany; hydrobiology; descriptive geometry, computer graphics and design; higher and applied mathematics etc.

According to Instructions of Ministry of Education and Science of Ukraine of 20.08.2007, №754 and Regulations "On Master Training in Research Programmes" Scientific Council of NUBiP of Ukraine can change partly normative compound of education content for intensification of research direction of Master Programme.

Studies in such MA course is performed at the scheme 4+1,5(2). Master graduates of research direction can enter PhD school just after studies completion if they have recommendations of scientific council of respective ESI.

At NUBiP of Ukraine Master training in research programmes is provided by 350 Doctors and Professors and more than 1380 Assistant Professors and PhDs, among them 228 Doctors and 925 PhDs working at KTC of NUBiP of Ukraine (Chapter 7.1).

Especially popular at the University are the educational-professional programs of the field of knowledge "**Specific Categories**" in specialties "**Pedagogics of Higher School**", "**Quality, Standardization and Certification**", "**Administrative Management**", "**Management of Educational Establishment**". The admission advantages for these specialties are enjoyed by bachelors (specialists/Masters) of any training direction who fluently speak foreign languages (English, German, French, Japan etc).

Programs of Pedagogics of Higher School are assigned for training lecturers of establishments of I-II level of accreditation and are at NUBiP of Ukraine by Pedagogics Faculty with the involvement of graduating department chairs and TSC of the corresponding ESI. These programmes are approved by scientific councils of Pedagogics Faculty and core ESI with the coordination of respective ministries (administration) and Academic Department of NUBiP of Ukraine.

Bases for practical training of Master students are leading Higher Educational Establishments of I-II level of accreditation.

Studies in such MA course is performed according to the scheme 4+1,5(2) depending on the type of education.

Programs in specialties of Quality, Standardization and Certification are developed for professionals training on such issues:

- adaptation of Ukrainian system of assessment of quality, safety, certification and standardization to respective international standards and their implementation into practice;
 - quality management.
- The programs envisage particular specialties and provide training of:
- experts-analysts that Master modern methods of chemical, physical and chemical, biological, ecological expertise and quality and safety assessment of corresponding objects at international standards (specialty – "Laboratory Work");
 - specialists in quality management, certification and standardization of raw materials, final products, technology, organizations, etc. at corresponding institutions and industries.

Formation of topics for Master theses is carried out by the scientific councils of respective TSC, Faculty of Quality, Standardization and Certification of AIC Products of ESI of Quality, Standardization and Certification of AIC Products of NUBiP of

Ukraine with engagement of respective specialized department chairs and TSC, ESI of Business and other ESI of the university and institutes (laboratories), respective ministries (administration), SRI of NAS of Ukraine, UAAS and Academy of Medical Sciences of Ukraine, branch analytical laboratories, other organizations including foreign ones.

Scientific-coordination board on quality, certification and standardization issues of National Agricultural University coordinates Master's training performed by the Rector of the University after statement of the Dean of the Faculty and Head of Scientific-Coordination Board, agreed with Academic departments of NUBiP of Ukraine.

Training of Faculty at NUBiP of Ukraine, that realizes such Master Degree Programmes, was carried out by specialists from the Ministry of Environment of the USA, Food and Agricultural Organization of the United Nations (FAO UN), Louisiana State University, Iowa State University, Penn State University (the USA), Tokyo Agricultural University and State Agency of Environment Protection of Japan "Jaika", University of Water Resources and Life Sciences (Austria), Ghent University (Belgium), Humboldt University of Berlin (Germany) and others, according to international and interuniversity programmes and agreements.

Studies in the programme is performed at the scheme 4+1,5(2).

Entrants for such Master Degree Programmes should speak foreign languages fluently (English is obligatory).

Programmes of Administrative Management for Master Training (MBA)

are oriented at training highly-professional managers able to manage agrarian business on the basis of innovative managerial knowledge and skills, modern computer technologies and foreign languages. Characteristic of those programs is that their content is influenced by basic education (economic or non-economic) and the future employment. For the first category in the curriculum of optional subjects the technological disciplines are envisaged while for the second one – the economic ones.

Formation of the content of Master programmes for specialists with basic economic education is made by TSC of agricultural management, marketing and quality management of AIC products of ESI of Business with involvement of corresponding department chairs of other ESIs of the National Agricultural University (professionals from ministry administration, state committees, companies, households, farms, etc. can be engaged also).

Coordination and approval of such programmes is made by scientific councils of respective TSC, SRI and ESI of Business (by the coordination of Academic Department of NUBiP of Ukraine) and they are approved by corresponding ministries, state committees, companies, prominent businessmen, etc.

Applicants for this direction of Master Training should know foreign languages very well (English is obligatory).

Studies in the programme is realized by the scheme 4+1,5(2).

Varieties of this Master Degree direction are two programmes with teaching in foreign languages:

- "Master of Business Administration (in Agriculture)", training is performed according to the agreement with Weihenstephan University of Applied Sciences (Germany). Disciplines are taught in German and practical training is carried out in Germany. Graduates of this Master Degree Programme receive documents about education of both universities;
- "Master of Business Administration (in Finance)", which is coordinated and carried out with the assistance of Council of Universities of EU countries (Wageningen University, Humboldt University of Berlin, University College

Cork, University of Wolverhampton, The Scottish Agricultural College, Warsaw Agricultural University) with awarding respective certificates after graduation. Teaching is performed in English.

Formation of the content of Master programmes for specialists with basic non-economic education is carried out by TSC (department chairs) of Economics, Marketing and Management of branch ESI of National Agricultural University with engagement of respective department chairs of ESI of Business and leading education, research and business establishments and organizations of Ukraine etc.

Coordination and approval of the mentioned programmes are made by scientific councils of relevant TSC, SRI, faculties, branch ESI and ESI of Business (by the coordination of Academic Department of NUBiP of Ukraine) if there are positive comments of relevant branch ministries, state committees, institutions, organizations, prominent businessmen, etc.

All-University Council of NUBiP of Ukraine in the field of administrative management issues forecasts demand for professionals, carries out general coordination and methodical control of MBA students training. Resolutions of this Council are approved by the Rector of National University of Life and Environmental Sciences of Ukraine.

One of the administrative programmes is Master Degree Programme "Environmental Management", which is realized at NUBiP of Ukraine together with Wageningen University (the Netherlands), one of the most authoritative in Europe, with awarding documents about education of both universities after successful completion of Programme. Teaching is performed in English.

Studies is realized by the scheme 4+1,5(2).

Entrants in mentioned Master Degree Programmes should know foreign languages very well (English is obligatory).

Master programmes in specialty "**Management of Educational Establishment**" are being implemented at NUBiP of Ukraine since 2011 and are directed at training managers of enterprises, institutions and organizations in the field of education and production training. Such programs are coordinated by pedagogical faculty of NUBiP of Ukraine. They are approved by the Scientific Council of pedagogical faculty and agreed with corresponding Ministries (Committees), teaching department and Master programmes center of NUBiP of Ukraine.

The bases for practical training of Masters of the mentioned specialty are the best universities of I-II accreditation levels.

Teaching at such MA courses is performed by the scheme 4+1,5 (2) depending on the form of education.

Programme of Master Training for Specialty "State Service (Public Administration)" is highly demanded at the University. These programmes are directed at training specialists for states and public authorities who are able to effectively develop and implement the received knowledge in the field of state regulations on the basis of modern legislation and information technologies.

The programme of Master training in specialty "State Service" is prepared by the Scientific Council of ESI of Post-graduate Education of NUBiP of Ukraine with engagement of other ESI of the National Agricultural University, Chief Office of State Service (Public Administration) of Ukraine, branch ministries, state committees, representatives of state bodies of authority and self-government.

Assignment to the studies at the MA course is given by state authority according to the Decree of Cabinet of Ministers of Ukraine from 29.07.2009, № 789.

Practical training is provided at state management bodies which conduct management of corresponding industries, territories and organizations including abroad.

Themes of Master theses are approved by the Rector of the National University of Life and Environmental Sciences of Ukraine after the statement produced by Scientific Council of ESI of Post-graduate Education, agreed with Academic Department of NUBiP of Ukraine and representatives of Chief Office of State Service of Ukraine.

Master graduates of full-time education should know at least English spoken language. Term of studies in the programme is 1-2 years (depending on type of education).

Table 2.2. Scientific specialties in which PhD students training at NUBiP of Ukraine is provided

Code	Branch of science, specialty	Basic Institution	SA of NUBiP of Ukraine "CATU"
1	2	3	4
01	Physical-Mathematical Sciences		
01.01.02	Differential Equations	+	
02	Chemical Sciences		
02.00.01	Inorganic Chemistry	+	
02.00.10	Bioorganic Chemistry	+	
03	Biological Sciences		
03.00.01	Radiobiology	+	
03.00.04	Biochemistry (Biological and Veterinary Sciences)	+	
03.00.05	Botany	+	
03.00.10	Ichthyology	+	
03.00.12	Plant Physiology	+	+
03.00.13	Human and Animal Physiology (biological and veterinary sciences)	+	
03.00.15	Genetics	+	
03.00.16	Ecology (Biological and Agricultural Sciences)	+	
03.00.20	Biotechnology (Biological, Agricultural and Technical Sciences)	+	+
05	Technical Sciences		
05.01.01	Applied Geometry, Engineering Graphics	+	
05.01.02	Standardization, Certification and Metrological Provision	+	
05.01.03	Technical Aesthetics	+	
05.05.03	Engines and Energy Plants	+	
05.05.11	Machinery and Equipment for Agricultural Production Mechanization	+	+
05.09.03	Electricrotechnical Complexes and Systems	+	
05.13.07	Automation of Administrative Processes	+	
05.16.01	Metal Science and Thermal Processing of Metal	+	
05.18.05	Technology of Sweetener and Fermentation Products		+
05.18.13	Technology of Preserved and Refrigerated Food	+	
05.18.16	Technology of Food Products	+	
05.23.06	Technology of Wood Processing, Manufacture of Furniture and Products of Wood	+	
05.23.17	Construction Mechanics	+	
05.26.01	Labor Protection	+	
06	Agricultural Sciences		
06.01.01	General Farming	+	+
06.01.02	Agricultural Melioration	+	
06.01.03	Agricultural Soil Science and Agro-Physics	+	+
06.01.04	Agrochemistry	+	+
06.01.05	Plant Selection and Seed Growing	+	+
06.01.06	Vegetable Growing	+	+
06.01.07	Pomiculture	+	+
06.01.09	Plant Growing	+	+
06.01.08	Viticulture		+
06.01.11	Phytopathology (Agricultural and Biological Sciences)	+	
06.01.12	Forage Production and Cultivation of Meadows	+	
06.01.13	Herbology	+	
06.01.15	Preprocessing of Plant-Growing Products	+	+
06.02.01	Animal Breeding and Selection	+	+

1	2	3	4
06.02.02	Animal Feeding and Technology of Forages	+	
06.02.03	Fishery	+	
06.02.04	Technology of Animal Husbandry Products Production	+	
06.03.01	Forest Plants and Phyto-melioration (biological and agricultural sciences)	+	
06.03.02	Forest Management and Forest Taxation	+	
06.03.03	Forest Science and Forestry (biological and agricultural sciences)	+	
07	Historical Sciences		
07.00.01	History of Ukraine	+	
08	Economic Sciences		
08.00.03	Economics and Administration of National Economy	+	
08.00.04	Economics and Administration of Enterprises (by types of economic activity)	+	+
08.00.06	Economics of Nature Use and Environmental Protection	+	
08.00.07	Demography, Economics of Labor, Social Economics and Politics	+	
08.00.08	Money, Finances and Credit	+	
08.00.09	Accounting, Analyses and Audit (by types of Economic Activity)	+	
09	Philosophical Sciences		
09.00.02	Dialectics and Methodology of Cognition	+	
09.00.05	History of Philosophy	+	
09.00.11	Religion Science	+	
11	Geographic Sciences		
11.00.01	Physical Geography, Geophysics and Geochemistry of Landscapes	+	
12	Juridical Sciences		
12.00.06	Land Law; Agricultural Law; Ecological Law; Nature Resources Law	+	
12.00.07	Administrative Law and Process; Finance Law; Information Law	+	
13	Pedagogic Sciences		
13.00.02	Theory and Principles of Education (by fields)	+	
13.00.04	Theory and Principles of Professional Education	+	
16	Veterinary Sciences		
16.00.01	Animal Diagnostics and Therapy	+	+
16.00.02	Pathology, Oncology and Morphology of Animals	+	+
16.00.03	Veterinary Microbiology, epizootology, infectious diseases and immunology	+	+
16.00.04	Veterinary Pharmacology and Toxicology	+	
16.00.05	Veterinary Surgery	+	
16.00.06	Animal Hygiene and Veterinary Sanitation (veterinary and agricultural sciences)	+	
16.00.07	Veterinary Obstetrics	+	
16.00.09	Veterinary-Sanitary Expertise	+	
16.00.10	Entomology (Veterinary and Agricultural Sciences)	+	+
16.00.11	Parasitology	+	
16.00.12	History of Veterinary Science	+	

3. PRINCIPLES OF THE FORMATION OF PROGRAMMES AND CURRICULA OF MASTER'S TRAINING

The basic principles of the formation of Master's training programme content are:

- correspondence of available and perspective needs of agroindustrial, biotechnological, nature protection and scientific research complexes and other branches of the economy of Ukraine
- adaptation to the world's acceptable system of professionals' training (Bologna process)
- providing flexibility in the system of specialists' training for their adaptation to rapidly changing demands of national and international labor market
- innovative character of Master programmes and work curricula of Master training
- integration in the Master programmes of educational, scientific research and innovative activity by the example of the leading world's research universities
- logical interconnection of Master programmes with the programmes of professionals training of EQL "Bachelor" and "Specialist" (formation of features of future Master programme in the bachelor programmes)

The content of Master education is determined by the appropriate branch standard of higher education of Ukraine, namely: educational-qualification characteristics, education-professional training programme and structural-logical scheme, on the basis of which the curricula are developed.

Curriculum of Master's training is the normative document that determines enumerations and scopes of education disciplines, sequence of their learning, forms of education classes conduct, practical training and its volumes, forms and methods of current and total knowledge checking.

Master students' (audience) curriculum is developed every academic year by the deans of corresponding faculties, and is approved by the Educational-Scientific Institute (ESI) director of Master programme center, the head of NUBiP of Ukraine Academic Department, first prorector of teaching-educational and organization work and is confirmed by the University Scientific Council.

In the curriculum the disciplines are grouped in such sequence (see Fig. 3.1) :

- normative educational disciplines for all the students of the University Master courses promote Masters training for future research activity and study at PhD courses, help to Master foreign language, see the need in harmonic development of nature and the society, have the information in the field of international standardization and certification system of agrarian field of production and to forecast development of global agriculture and food resources. Such disciplines are to a great extent studied by the Master students independently.
- normative educational disciplines in the context of the given specialty (45-55% from the general list of disciplines of Master programmes) include:
 - cycle of the humanities and social economic disciplines – 20-30% from the general list of disciplines, obligatory for learning;
 - cycle of professional oriented and natural science disciplines – 25-35% in Master programmes of different speciality and direction of professionals training;
- optional educational disciplines by the choice of the university contain the cycle of professional oriented, practical and natural science disciplines:
 - up to 20% from the general amount of disciplines of Master programmes of production direction;
 - up to 30% – Master programmes of research direction;

- optional educational disciplines by the choice of the Master student (audience):
 - 10-15% from the general amount of disciplines of Master programmes from the cycle of the disciplines of professional training, from which student choose one or two.

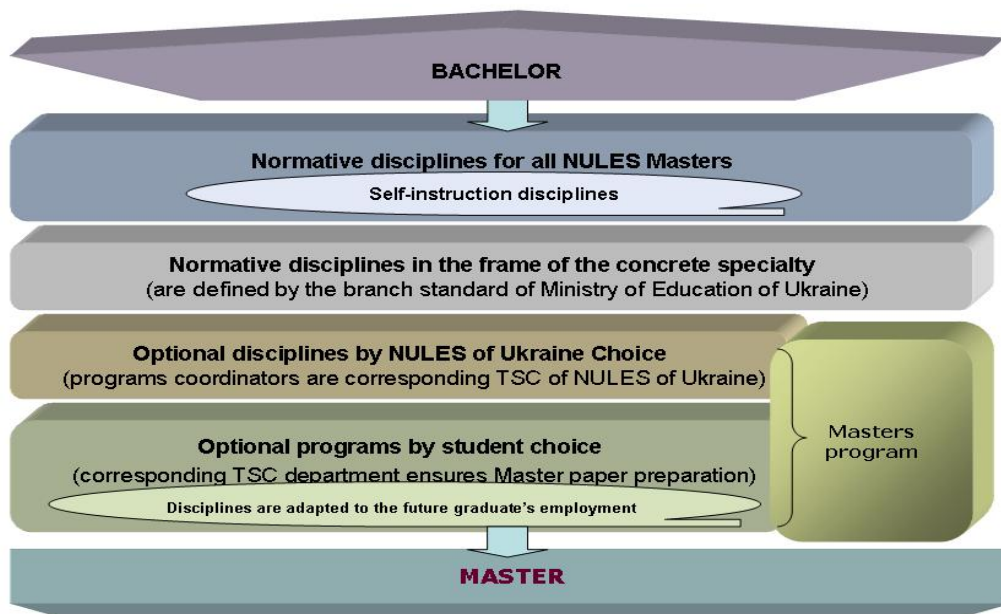


Fig. 3.1. Structure of Master programmes of NUBiP of Ukraine

10-15 % of the total education loading are assigned to the fulfillment of the Master programme and to the state attestation.

For strengthening of some component of normative constituent of educational content, Ministry of Education and Science of Ukraine allowed NUBiP of Ukraine Scientific Council to make changes to this constituent (up to 10%).

Optional component of the education content for EQL "Master" is determined by the Scientific Councils of the corresponding Scientific Educational Centers and proved by the Scientific Council of NUBiP of Ukraine with taking into consideration the scientific pedagogical potential of the university, employers' needs and scientific interests of the Master students.

Education time for the independent work of Master student makes up no less than 1/3 and no more than 2/3 of the total education time, according to the "Statement on organization of the education process in universities", confirmed by the Decree of the Ministry of Education and Science of Ukraine of June 2, 1993, № 161.

The disciplines of the normative part are compulsory for learning by all Master students.

One or two disciplines are chosen by the student out of all disciplines, which integrate theoretical and practical knowledge in the direction of Master training. These disciplines are learned independently, necessary consultations are provided by the corresponding departments. The list of the disciplines is coordinated with the scientific advisor of Master programme. Students' special training including research in the subject of Master paper begins from the 1st term of their study at the Master courses. The substantial part of their training is assigned for self-instruction work.

The academic process at the Masters' courses of NUBiP of Ukraine is implemented in various forms, among them being the class work, practical training and checking measures (Fig. 3.2).

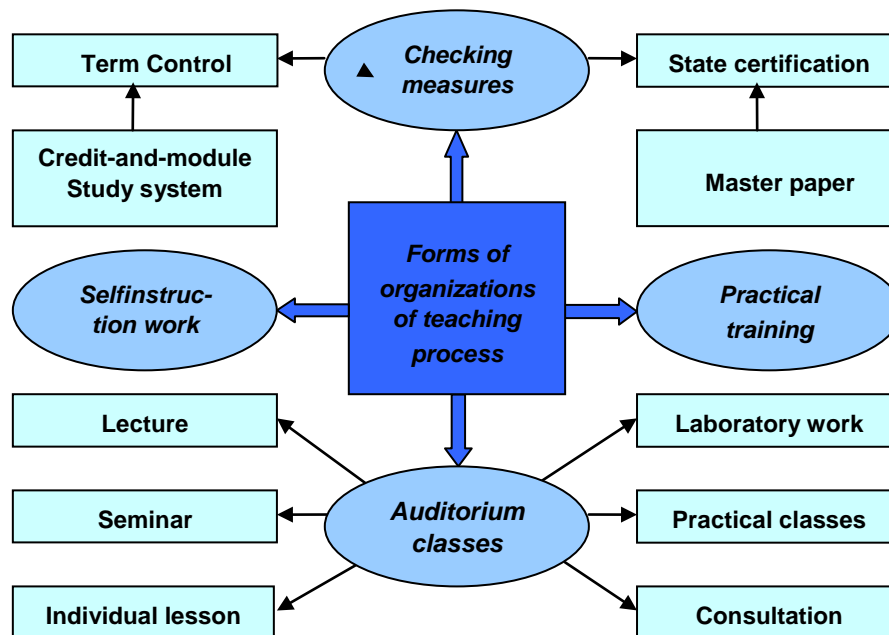


Fig. 3.2. Main forms of implementing teaching process in NUBiP of Ukraine

The auditorium classes are conducted in the form of lectures, practical, seminar, laboratory and individual lessons, including classes with the use of distance learning methods.

Self-instruction work is the main way of Mastering knowledge and skills in the time free from normative classes. In NUBiP of Ukraine it is provided by the system of teaching-and-methodic means, among them manuals, teaching and methodical textbooks, abstracts of teaching instructors' lectures, practical classes etc, including their electronic versions which can be used in the distance form. This work is conducted according to schedules which guarantee possibility of the students' individual access to proper didactic means. At the beginning of the current term the students are informed about the schedule.

4. SYSTEM OF ATTESTATION OF THE MASTER TRAINING

Attestation of Master students foresees current and state attestation. In its turn the current attestation includes preparation and defending of the reports and term papers (projects) in the chosen specialty, reports on practical training, credits and exams.

Once a year a Master student passes the attestation at the department and T of TSC meetings where he (she) makes a report on the state of fulfilling individual plan on the whole and Master paper in particular.

State attestation includes state exams, preparation of the Master thesis and its defence in the presence of State examination commission. As a result of defence Master student obtains respective qualification. Functions of the State examination commission can be performed by extended scientific councils of the respective Education-Scientific Institutes (with engagement of the representatives from other ESI and NUBiP of Ukraine Rectorate, other universities, ministries, state committees of Ukraine, representatives of production sphere, entrepreneurs and businessmen, etc.).

Head of the State examination commission is to be a person, who does not work at NUBiP of Ukraine and is a doctor (Professor) or head of the branch (its department) of the respective ministries, state committees, business structures, Scientific-Research Institutes of the National Academy of Sciences of Ukraine and UAAS, etc.

5. PART-TIME AND EXTERNAL FORMS OF STUDIES AND THE SECOND HIGHER EDUCATION AT NUBiP of Ukraine MASTER TRAINING

Main form of Master training in NUBiP of Ukraine is the full-time one.

However, part-time and external forms of studies are foreseen for talented youth, who have already chosen jobs.

Part-time form, as a rule, is longer in terms of time in comparison to full-time form, and obliges student to work mainly independently, using respective syllabi and means of distant education.

Current attestations foresee examinations, when Master students come to the University with being separated from production and obtain brief systemized knowledge. During this period they defend reports, term papers (projects), pass credits and exams. Examinations are regulated in time, that is determined by the duration of the Master programme.

External form of education foresees exceptionally independent training of students and his/her attestation according to the individual curriculum. It is developed by the student himself, by the Training-Educational Center and Dean office, it considers student's erudition and his/her job place. Limited number of students are studying at external form of education (number is determined by the Ministry of Education and Science of Ukraine), they are able to work independently with the material of Master Programmes.

List of specialists in which Masters are trained at NUBiP of Ukraine in part-time and external forms of education is given in Table 2.1.

Students of the University are given opportunity to study simultaneously at Master Programme in two specialties. Such an opportunity is realized according to the valid legislative basis:

- for the first time EQL of Master can be obtained on the contest basis at government order, and obtaining education in other specialties only on the contract basis with physical or juridical person;
- if academic process is conducted in two Master Programmes simultaneously, this, as a rule, is a combination of full-time and part-time forms of education, or both part-time;
- one of the forms of second education is also training reserved officers in the range of military specialties (connected with civil specialty) in specially determined days;
- disciplines Mastered in one Master Programme, are passed for another one, which makes the process of obtaining respective Degree shorter (passing the disciplines is performed by the decision of the scientific councils of the Teaching-Scientific Centers (Educational-Scientific Centers), that accompany Master Programmes administratively)

6. ADMISSION TO MASTER DEGREE AT NUBiP of Ukraine

Admission to Master training is conducted both by governmental order, and by conditions of agreement between physical or juridical persons. Persons who want to be admitted for Master Programmes, must have basic or full higher education in respective direction (specialty), according to requirements, approved by rules of admission to Master Degree Programmes at NUBiP of Ukraine.

Admission to training specialists of Master EQL on the basis of received Specialist EQL is performed at the physical (juridical) persons' cost (except entrants to specialty "State service" at the Basic Institution of NUBiP of Ukraine). For study for getting Master EQL in specialty 8.11010101 "Veterinary Medicine" (in different kinds) persons are admitted who got the Junior specialist EQL in the specialty 5.11010101 "Veterinary Medicine".

According to special rules confirmed by the Cabinet of Ministers Decree from 29.07.2009 № 789 "On the approval of the procedure of admission for study at educational-professional programme of training Masters in specialty "State Service" of the field "Public Administration" and the graduates' employment" at the Basic Institution of NUBiP of Ukraine the admission for study in the specialty "State Service" is realized. For the mentioned programme of study for the state order the documents are accepted from persons who have full higher education, work at the state bodies or self-governing bodies at least for one year and are younger than 45 at the moment of documents' submission.

A person who is to be admitted to the Master Programmes, must present the following documents to the Admission Committee: application for University Rector name; original of diploma about education or its approved copy; annex to diploma or its approved copy; 5 photos of size 3x4 cm; direction-recommendation (if available); application of enterprise, organization, institution for job placement of the graduate student (target direction), for enrolling students at part-time form of education – extract from work the record card; passport and other documents proving the right for entrance of the enrolling student is presented personally.

The person's competitive score is calculated as a sum of scores of the results of entrance exams and the average score of the appendix to diploma. It is assessed at the scale from 100 to 200 scores. Entrance exams for programmes of training Master EQL are conducted in the form of testing in the complex of fundamental and professionally oriented disciplines of the normative cycle and foreign language according to the programmes of Bachelor training.

For the entrants to specialties:

- "Pedagogics of higher school" and "Educational institution management" – testing in the complex of humanitarian subjects and foreign language;
- "Quality, standardization and certification" – testing in the issues of quality, standardization, certification and foreign language;
- "Administrative management" – testing in the basics of economics and foreign language;
- "State service" – testing in the issues of basics of state and law and economics essentials.

7. CHARACTERISTICS OF THE TEACHING STAFF PROVISION FOR THE EDUCATION, RESEARCH AND SCIENTIFIC-INNOVATIVE ACTIVITIES AND BASIS OF MASTER STUDENT PRACTICAL TRAINING AT NUBiP of Ukraine

7.1. University Staff

More than 3052 scientific-pedagogical and pedagogical Faculty are working at NUBiP of Ukraine, among them there are more than 350 Professors and Doctors, and more than 1380 Assistant Professors and PhDs.

Basic Institution of NUBiP of Ukraine has more than 1448 scientific-pedagogical workers, among them: 228 Professors and Doctors, 925 Assistant Professors and PhDs. Among them: Heroes of Ukraine – 2; Academicians of NAS of Ukraine – 2; Academicians of UAAS – 11; Academicians of Ukrainian Academy of Pedagogical Sciences – 11; Corresponding Members of the NAS of Ukraine – 4; Corresponding Members of the UAAS – 17; Members of public academies – 51; Honoured workers of science and technics of Ukraine – 22; Honoured workers of science and public education of Ukraine – 19; Honoured workers of higher school of Ukraine – 2; Honoured workers of agriculture – 13; Honoured inventors of Ukraine – 4; Honoured physicians of veterinary medicine – 2; Honoured workers of veterinary medicine – 1; Honoured economists of Ukraine – 3; Honoured foresters of Ukraine – 3; Honoured lawyers of Ukraine – 3; Honoured workers of culture of Ukraine – 4; Honoured craftsmen of folk creativity – 1; Masters of sport of Ukraine – 9.

More than 300 faculty workers of the Basic Institution of NUBiP of Ukraine participate in the work of expert councils of the Higher Attestation Committee of Ukraine (HACU), State Accreditation Commission (SAC) and Academic-Methodological Commissions (AMC) of the Ministry of Education and Science of Ukraine.

Recent years are characterized by the substantial reinforcement of NUBiP of Ukraine with young teachers and scientists, that are defending PhD and Doctor thesis successfully, speak foreign languages and work with modern computer technologies.

7.2. Educational Work

Educational work at NUBiP of Ukraine is performed by Basic Institution of NUBiP of Ukraine, SA of NUBiP of Ukraine "CATU" and 12 regional Higher Educational Establishments of NUBiP of Ukraine of the I-II levels of accreditation. Practical training of students is conducted at Educational-Research Farms and Scientific-Research Stations of NUBiP of Ukraine, at the bases of the practical training of regional higher educational establishments of NUBiP of Ukraine, in the leading agricultural firms, farms, etc. of Ukraine and abroad (Table 7.4).

7.2.1. Basic Institution of NUBiP of Ukraine

Structurally, Basic Institution of NUBiP of Ukraine is composed of Educational-Scientific Institutes (ESI), which include Educational-Scientific Centers (TSC), inter-

Institute Educational-Training Centers (ITSC), Scientific-Research Institutes (SRI), faculties and department chairs.

In general Basic Institution of NUBiP of Ukraine has 12 ESI, 12 SRI, 25 TSC, 21 Inter-Institute Educational-Training Centers, 20 faculties and 123 department chairs (Table 7.1).

Nature-Humanitarian ESI (Table 7.1) provides social-humanitarian disciplines (foreign languages, pedagogy, philosophy, sociology, psychology, and culturology) and natural-scientific (chemical, physical, mathematical disciplines) for students of all EQL. At the same time Institute conducts pedagogical training of teachers of the special disciplines for agricultural higher educational establishments of the I-II accreditation levels and social teachers for rural territories.

Among the training laboratories of the Institute the best are following: methodic of teaching Ukrainian and Russian languages as foreign; technical means for studying foreign languages; analytical chemistry and environmental chemistry, non organic and bio-non-organic chemistry; mechanics and molecular physics; information technologies, etc.

The institute conducts scientific and education work at international programmes of cooperation with Universities and scientific institutions of the USA, Germany, Canada, Japan, Bulgaria, Russia and coordinates international cooperation on adjustment of programmes and technologies of continuous professionals training in natural and social-humanitarian disciplines.

ESI of Plant-Growing, Ecology and Biotechnology (Table 7.1) conducts training Masters in the specialties "Agronomy", "Selection and Genetics of Agricultural Crops", "Fruit Growing and Viniculture", "Ecology and Environmental Protection", "Ecological Biotechnology and Bioenergetics" in full-time, part-time and external forms of study (table 2.1). In several groups the classes are conducted in English.

Main training laboratories of the ESI are the following: preservation, processing and quality evaluation of plant products; preservation, processing and quality evaluation of fruit and vegetable products and products of viniculture; selection and seed growing of agricultural crops; plant biotechnology; phyto- and virusology; molecular genetics; microbiology; radioecology; applied ecology and ecological monitoring etc.

Institute actively cooperates with the range of foreign Universities: Ghent University (Belgium), Wageningen University (Netherlands), Humboldt University (Germany), Iowa State University, Connecticut and Louisiana Universities (USA), Tokyo Agricultural University (Tokyo, Japan), Chzheczian Agricultural Academy (Khanchzhou, China). The memoranda on the systems of education mutual recognition are signed. Students of the ESI regularly have lectures provided by foreign Professors: Dr. Gleden, Linn Sfera, Paul Markovic (USA); J. Horman, Van Klimut (Ghent University, Belgium), M. Boeme (Humboldt University, Berlin, Germany) and others. A lot of successful students of ESI every year have studies, training courses and practical training abroad, getting the valuable experience in Mastering modern agro- and biotechnologies.

ESI of Animal Husbandry and Water Bioresources (Table 7.1) provides training Masters in specialties "Technologies of production and processing of cattle products", "Water bioresources" in full-time, part-time and external forms of education (Table 2.1).

Department chairs of the Institute established own structural sub-units directly at production units: educational-exhibition poultry hall (poultry yard, incubator, vivarium for keeping poultry), selection laboratory of egg crosses fowls (Production Unit of

NUBiP of Ukraine "Educational Training Breed Poultry Plant named after Frunze"), advisory center for improving qualification of professionals in the poultry industry, laboratory for bee reproduction (Golosievo apiary), laboratory of cynology, bank of genetic resources of the agricultural animals, breeding farms of Ukrainian black-and-white dairy breed and Angus breed of cattle (SSD OF NUBiP of Ukraine "TRF "Vorzel"), laboratory of classical kinds of horse sport (stable, pony farm).

Amongst educational laboratories of the Institute the main are the following: zoo analysis of forage; milk quality; meat quality and quality of meat products; apiculture; sheep breeding; rabbit breeding and fur farming; bioproductive animals; population genetics; horse breeding; biotechnologies for animal reproduction; technologies for fish and fish products production and processing; technologies for meat and meat products production and processing; technologies of milk and dairy products production; technologies of aqua culture products production; hydrobiology; ichthyology; zoology, etc.

Institute regularly cooperates with Global Association of Animal Husbandry, European Association of Animal Husbandry, Lithuanian Veterinary Academy, European Cynology Association (Kingdom of Belgium), Moscow Agricultural Academy named after K. Timiriazev (Russia); Institute of Meat Cattle (Russia); Institute of Animal Husbandry (Belarus); Astrakhan State Technical University (Astrakhan, Russia), Bashkiria State Agricultural University, Austrian Institute of Bee-Farming (Luam-am-See, Austria), Agricultural University (Nitra, Slovakia), Information Institute of Peking Academy of Agricultural and Forestry Sciences (China); Department of Bee-Keeping at the Institute of Horticulture and Flower Growing (Pulawa, Poland), International Federation of Bee-Keeping ("Apimonda"), International Association of Bee-Keeping Researchers (Great Britain), All-Russian Scientific-and-Research Institute of Horse Keeping (Russia), with stud farm "Sijary" (Cracow, Poland), with Ghent University (Belgium), Humboldt University (Germany), Iowa State University and Louisiana State University (USA) .

ESI of Veterinary Medicine and Quality and Safety of Animal Husbandry products (Table 7.1) provides training of professionals in the direction "Veterinary medicine" (Table 2.1). Separate academic groups have their lessons in English. Starting from 2006 Master training in veterinary medicine is conducted on the basis of the full secondary education with the term of studies for 5.5 years.

Amongst education laboratories of the Institute the main are the following: laboratory of surgery, pharmacology and toxicology, obstetrics, gynecology and biotechnology of animal reproduction, diseases of ruminants, horse diseases, pig diseases, poultry diseases, veterinary sanitation and hygienics of production, preservation, transportation, processing and realization of animal products, milk and dairy products veterinary-sanitary expertise, veterinary-sanitary expertise of meat and meat products, veterinary-sanitary expertise of fish, fish products, eggs, honey and plant products, animal anatomy, veterinary microbiology, virology and biotechnology, parasitology.

Institute actively realizes international projects and programmes with the range of countries: the USA, Germany, Great Britain, Italy, Czech Republic, Poland, Russia, Belarus, etc.

ESI of Quality of Bioresources and Life Safety (Table 7.1) includes: Faculty of food technologies and management of quality of AIC products, faculty of plant protection, Ukrainian Laboratory of AIC Food Quality and Safety, Ukrainian Scientific-Research Institute of Agricultural Radiology, Odessa Scientific-Research Institute of Standardization and Technologies of Ecologically Safe and Organic Products.

Faculty of Quality, Standardization and Certification of AIC Products coordinates Master Training in specialty "Quality, Standardization and Certification", "Technologies of Meat Preservation, Conservation and Processing", "Technologies of

Preservation and Processing of Water Bioresources”, and at the faculty of Plant Protection, Agrochemistry and Soil Study at full-time, part-time and external forms of education (Table 2.1). Institute gives opportunity to its students to train in TUV Rheinland InterCert Academy with the aim of gaining international certificate “Specialist on quality”.

Laboratory-practical training of students is conducted at training laboratories of the Institute and at scientific laboratories of the Ukrainian Laboratory of AIC Food Quality and Safety, Ukrainian Scientific-Research Institute of Agricultural Radiology, Odessa Scientific-Research and Project Institute of standardization and technologies of ecologically safe and organizational products, veterinary microbiology, virology and biotechnology, radiobiology.

The institute conducts scientific and academic work in international cooperation programmes with leading Universities and scientific institutions of the USA, Canada, Germany, Belgium, France, Great Britain, Poland, Japan, China, Russia etc.

Technical ESI (Table 7.1) conducts training specialists in the field of mechanization, construction and design of agricultural machinery, transport technologies in specialties “Mechanization of Agriculture”, “Machines and Equipment of Agricultural Production”, “Equipment of Forestry Complex”, “Organization of Transport Shipment and Management”, “Organization of Traffic Management” in full-time, part-time and external forms of education (Table 2.1).

Amongst educational laboratories of the Institute the main are the following: construction of tractors and automobiles; soil-cultivating, sowing and planting machines and chemicalization; precise farming; machines and equipment for meat processing; machine technologies in plant growing; standardization, certification and quality of technics in AIC etc. Students of the Institute have opportunity to Master practical component at the scientific laboratories of the National Scientific IMEA of UAAS and UkrSRIFPTT named after L. Pogorilyy of the Ministry of Agrarian Policy of Ukraine, in PU of NUBiP of Ukraine “Velyka Snitynka TRF named after O.V. Muzychenko”, construction bureau and departments of the agricultural machine-building plants etc.

The Institute has established relations with the number of universities of Europe and the USA, and, namely: Dresden Technical University and the Institute of Agricultural Machinery of Bonn University (Germany), Institute of Construction, Mechanization and Electrification of Agriculture (Poland), Warsaw Polytechnical University, Industrial Institute of Agricultural Machines (Poland), Lublin Agricultural Academy (Poland), Hungarian Institute of Agricultural Machines, Institute of Agricultural Machines (Czech Republic), Lithuania Agricultural University, Institute of Agricultural Engineering of Lithuanian Agricultural University, Iowa, Minnesota and Louisiana States Universities and Purdue University (the USA), Institute of Energy Power of AIC of NAS of Belarus, AMACO company, Office of AGCO Corporation Ltd in Ukraine (the USA), CLAAS Academy (Germany), MTP Company (Belarus).

ESI of Power Engineering and Automation (Table 7.1) conducts training specialists in the field of energy power, electrification and automation in plant growing and stock farming, computer sciences in specialties “Automated control of technological processes”, “Electrotechnical systems of electric power consumption”, “Energy power in agriculture”, “Electrification and automation of agriculture” at full-time, part-time and external forms of study (Table 2.1).

Among study laboratories of the Institute the main ones are: automation of technological processes; electronic devices in agriculture; electrotechniques and electrification of agricultural production; electronics and microelectronics; computer graphics and design; energy conservation and non-traditional energy sources; engineering ecology etc.

The institute actively cooperates with Universities of the states Iowa, Indiana, Louisiana, Pennsylvania, Illinois, Georgia and Nebraska (USA), Dresden Technical University, Institute of agricultural machinery of Bonn University, Humboldt University (Germany), Center of Applied Researches of Polytechnical Institute (Malaga, Spain), Institute of Construction, Mechanization and electrification of Agriculture (Warsaw), Warsaw Polytechnics (Plotsk), Warsaw University of Life Sciences (Warsaw), Csezyn and Lodz Polytechnics (Poland), Institute of Agricultural Machinery (Prague), Hungarian Institute of Agricultural Machinery (Godolio), Austrian University of Tillage Culture (Vienna), Lublin Agricultural Academy, Higher Agricultural School (Nitra, Slovakia) etc.

ESI of Forestry and Landscape Architecture (Table 7.1) provides training of specialists for forestry complex and park-gardening in specialties “Forestry”, “Woodworking Technologies”, “Landscape architecture” at full-time, part-time and external forms of education (Table 2.1).

Amongst the best educational laboratories of the Institute are the following: forest cultures; protective forestry; forestry; gamekeeping; economics and management of forestry sector; forest accounting; economic-mathematical methods in forestry; mechanization of forestry works; wood science and wood quality; dendrology; decorative gardening and phyto-design; landscape architecture; park-gardening, etc.

Institute conducts scientific and education work in international cooperation programmes with leading Universities and scientific institutions of Europe and the USA, and namely: Global Institute of Sustainable Development of Yale University Forests, Faculty of Forests Resources of Pennsylvania University (USA), Southern Forest Scientific-and-Research Station of Swedish University of Agrarian Sciences, Makulai-Institute (Aberdeen, Scotland), Forestry Faculty of Freiburg University, Warsaw SRI of Forestry, international organizations – FAO, UN Global Center of Fire Monitoring, EEC of UN, Ghent University (Belgium), Humboldt University (Berlin, Germany), Iowa University and Purdue University (USA).

ESI of Land Management and Law (Table 7.1) conducts training specialists in the fields of protection and rational use of lands, legal regulation of agrarian and land relations, land utilization, state land cadaster in specialties “Land Utilization and Cadastre”, “Law Study” at full-time, part-time and external forms of study (Table 2.1).

Among the best institute laboratories are labs of geoinformation technologies and remote sensing; land cadaster; management of land resources; land legal relations; comparative law study; labor and social relations.

Students’ theoretical training is combined with substantial practical training at the subdivisions of State Agency of Land Resources of Ukraine, at juridical departments of district state administrations etc.

Institute actively maintains international relations and cooperates with education and scientific institutions and organizations of foreign countries, namely Ghent University (Belgium), Humboldt University (Germany), University of Perugia (Italy), University of Saskatchewan (Canada), DePaul University school of computer sciences, telecommunication and information systems (Chicago, USA), Council on Integration and Development of Agricultural Education (France-Germany), World Bank, Moscow State Law Academy (Russian Federation), Institute of Law and State of Belarus Republic etc.

ESI of Information and Telecommunication Provision of Agro-Industrial and Nature-Protection Branches of Economy (Table 7.1) realizes training of highly qualified specialists in specialties “Economic Cybernetics”, “Information managing systems and technologies” at full-time, part-time and external forms of study (Table 2.1).

Institute maintains relations with leading It-companies of Ukraine and the world: IBM, Microsoft, Apple, Incom etc. In the field of information supply of agro-industrial production the ESI actively cooperates with leading universities of the USA and Europe: State Louisiana University, Maryland, Dakota, DePaul University (Chicago).

ESI of Business (Tables 7.1) provides training of highly qualified professionals in Economics, Finance and Credit, Taxation, Management, Accounting and Audit, Marketing, Management of organization and Administering, Management of Foreign Economic Activity, Administrative Management at full-time, part-time and external forms of education (Table 2.1). Separate groups have lessons in English.

MSc Programme “Master of Business Administration in Agriculture – MBA-agr”, is worth of attention, it was started by NUBiP of Ukraine together with Weihenstephan University of Applied Sciences (Germany) and Wageningen University (the Netherlands) with obtaining diplomas of both partner-Universities.

ESI of Postgraduate Education (Table 7.1) conducts training and retraining of professionals of agro-industrial and nature protection branches, conducts training and retraining specialists with giving a document about second higher education and improving qualification, as it is displayed in Tables 2.1; 7.2, 7.3.

Master Programme in specialty “State Service (Public Administration)” Master Programme is specialized according to the training direction, obtained specialty and managing activity of audience. Graduates of this programme are employed in state bodies and self-governing bodies.

Table 7.2. Training specialists in ESI of Postgraduate Education

Activity kind	EQL with the term of studying		
	B	S	M
Training	2 years		1,5 years
Retraining		2 years	
Improving qualification	2-4 weeks	2-4 weeks	2-4 weeks

B – Bachelor; S – Specialist; M – Master

One of faculty activity kinds is raising qualification and internship of scientific-pedagogical and pedagogical staff of HEE (Higher Educational Establishments) of the I-IV accreditation levels (Table 7.3).

Table 7.3. Improving qualification of AIC specialists in ESI of postgraduate education

Training direction of specialists (Bachelors)	Specialty of training specialists (Specialists and Masters)	B	S	M
Economics of Enterprise	Basic specialties	+	+	+
Management	Basic specialties	+	+	+
Agronomy	Basic specialties	+	+	+
Geodesy, cartography and land management	Basic specialties	+	+	+
Processes, machines and equipment of agroindustrial production Power engineering and electro technical systems in agroindustrial complex	Basic specialties	+	+	+
Technology of production and processing of animal products	Basic specialties	+	+	+
Veterinary medicine	Basic specialties		+	+
State Regulation	Improving qualification, realization of programmes for professional and additional training state officers, managers and specialists of state enterprises, institutions and organizations		+	+
Training managerial reserves for AIC	Training reserve of managerial staff for state and private agroformations, training reserve of staff for managerial bodies of AIC		+	+
Improving qualification and internship of the scientific-pedagogical and pedagogical staff of HEE	Professional and special disciplines		+	+

B – Bachelor; S – Specialist; M – Master

In general, more than 3,000 state officers and managers of AIC enterprises improve their qualification.

The institute actively cooperates with other ESI of NUBiP of Ukraine, laboratories of SRI, NASU and UAAS, Ukrainian Laboratory of AIC Food Quality and Safety, Ministry of Agrarian Policy of Ukraine, State Agency of Land Resources of Ukraine, Chief State Service of Ukraine, separated departments, leading agroformations of AIC. Due to such cooperation more than 70 new education-thematic curricula for different flows of audience are developed each year at the Institute.

Institute actively participates in the realization of international programmes and projects with the number of countries: the USA, Germany, Great Britain, Czech Republic, China, Kazakhstan, Russia, Japan, Poland, Austria, the Netherlands, Belgium etc.

Thus, existing structure of the National Agricultural University takes into account needs of the agroindustrial complex and nature protection complex and provides training of highly qualified professionals.

However, structure of the KTC of NUBiP of Ukraine is still being improved. Taking into account great demand for specialists with fundamental and applied knowledge in biological disciplines it is planned to create the faculty of Applied Animal Biology and Laboratory Work in the structure of ESI of Bioresources quality and Life Safety, as well as faculty of applied plant biology and laboratory work in ESI of plant growing, ecology and biotechnologies.

Everything mentioned is realized on the basis of international cooperation and with the participation of the world leading partner universities (including their sponsorship support).

7.2.2. Regional Higher Educational Establishments

National University of Life and Environmental Sciences of Ukraine established a widespread network of regional higher educational establishments of I-IV accreditation levels throughout Ukraine. It includes Southern Affiliate "Crimean Agro-Technological University" of NUBiP of Ukraine and 12 regional higher educational establishments of the I-III accreditation levels, including 2 institutes, 9 colleges, 1 technical school. The main characteristics of these establishments are displayed in Table 7.4.

Regional HEE conduct training of junior specialists in 33 specialties, bachelors – in 16 directions, specialists – in 16 specialties, Masters – in 9 specialties (Table 7.6). In general, more than 21 thousand students are studying in the network of HEE of NUBiP of Ukraine.

Education activity of HEE is realized with the help of close cooperation with ESI, SRI and TSC, Faculties, Academic Department, Ukrainian Laboratory of AIC Products Quality and Safety, separated departments (SD) of NUBiP of Ukraine – Educational research farms and research stations of Basic Institution of NUBiP of Ukraine. Education-Scientific Institutes of Basic Institution of NUBiP of Ukraine provide assistance in development of the academic-methodological provision, modernization of the facilities, training and attestation of staff of higher qualification for HEE of NUBiP of Ukraine, conduct of student practical training.

Separated departments of NUBiP of Ukraine – research stations, training-research farms and plants, training-scientific centers, manufactures of Basic Institution of NUBiP of Ukraine and of regional HEE comprise the united basis for practical training at the arranged schemes, writing thesis, including Master thesis, scientific researches of students of the entire network of Higher Educational Establishments of NUBiP of Ukraine.

Directions and specialties for training professionals at the regional HEE are harmonically connected with directions and specialists of training professionals in Basic Institution of NUBiP of Ukraine. Due to this, network of HEE of NUBiP of Ukraine allows training professionals of EQL at the approved level system. Best students of the regional HEE have opportunity to continue studies at Basic Institution of NUBiP of Ukraine.

The directions in which training Bachelors is conducted in shortened terms at Basic Institution and regional HEE of NUBiP of Ukraine is presented in Table 7.5.

Table. 7.4. Main characteristics of the NUBiP of Ukraine regional Higher Educational Establishments of I-IV accreditation levels

Indicators	SA "Crimean Agro-Technological University" Of NUBiP of Ukraine 95492, Ukraine, AR of Crimea Simpferopol, community Agrarne e-mail: rectorat@csau.crimea-ua.com	Separated Structural Unit (SSD) of NUBiP of Ukraine "Berezhansky Agro-Technological Institute" 47507 Ternopil Region, Berezhany Academichna Str., 20 e-mail: office@bati.ber.te.uam	SSD of NUBiP of Ukraine "Nizhyns Agro-Technological Institute" 16600, Chernigiv Region, Nizhyn, Shevchenka Str., 10 e-mail: nat@uacitv.com	SSD of NUBiP of Ukraine "Crimean Agro-Industrial College" 97517, AR of Crimea, Malenke village e-mail: agro@aic.crimea.ua	SSD of NUBiP of Ukraine "Zalishchyky Agricultural College named after Khraplyvyy" 48800, Ternopil Region, Zalishchyky, Krushelnytska Str., 52 E-mail: zalishchyky@rambler.ru	SSD of NUBiP of Ukraine "Irpin College of Economics" 08200, Kyiv Region, Irpin, Gagarina Str., 9 e-mail: tek@irpin.co	SSD of NUBiP of Ukraine "Nemishayevo Agro-Technological College" 07854, Kyiv Region, Nemishaev community, Tekhnikumivska Str., 1 e-mail: nat_college@twin.nauu.kiev.uat	SSD of NUBiP of Ukraine "Mukachevo Agrarian College" 89600, Mukachevo, Matrosova Str., 32 e-mail: mdat1@yandex.ru	SSD of NUBiP of Ukraine "Boyarka College of Ecology and Natural Resources" 08152, Kyiv Region, Boyarka e-mail: bkeipr@mail.ru	SSD of NUBiP of Ukraine "Bobrovytsya College of Economy and Management named after O. Maynova" 17400, Chernigiv Region, Bobrovytsya, Chernigivska Str., 19 e-mail: bobrovytsya@rambler.ru	SSD of NUBiP of Ukraine "Pryberezhyany Agrarian College" 96563, AR of Crimea, Pryberezhne village e-mail: paknau@pt.strace.net	SSD of NUBiP of Ukraine "Bakhchysaray Construction Vocational Technical School" 98400, AR of Crimea, Bakhchysaray, вул. Радянська, 9 e-mail: bst-nauu@mail.ru	SSD of NUBiP of Ukraine "Crimean Vocational technical School of Agricultural Hydromelioration and Mechanization" 97202, AR of Crimea, Sovietske community, Kosmodemyanska Str.1 e-mail: sovteh@yandex.ru
Number of centers	6	–	–	–	–	–	–	–	–	–	–	–	–
Number of faculties	8	3	3	–	–	–	–	–	–	–	–	–	–
Number of department chairs	38	15	9	–	–	–	–	–	–	–	–	–	–
Number of departments	–	1	2	4	3	4	7	6	5	3	2	2	3
Number of educational laboratories	141	69	61	40	39	17	49	28	46	39	38	25	67
Number of students	5096	3688	1978	968	1069	1701	1990	1042	949	647	673	541	481
Faculty in general, including:	306	242	183	78	116	109	191	93	81	38	54	42	60
• Doctors of Science	42	12	18	2	3	5	5	–	–	–	–	–	–
• PhDs	189	57	77	16	20	36	48	4	9	2	3	1	–
• Teachers with pedagogical titles	–	35	23	20	31	6	22	14	19	17	8	10	8

**Table 7.5. Directions for training Bachelors,
where studies are conducted in shortened period**

Basic Institution of NUBiP of Ukraine
Veterinary Medicine Forestry and Landscape Architecture Woodworking technologies Agronomy Ecology, Environmental Protection Processes, Machines and Equipment of the Agroindustrial Production Power Engineering and Electro Technical Systems in Agroindustrial Complex Automation and Computer Integrated Technologies Transport Technologies (according to transport kinds) Accounting and Audit Economics of Enterprise Finance and Credit Management Law Geodesy, Cartography and Land Management Technology of Animal Products Production and Procession Food Technologies and Engineering Construction
Southern Affiliate of NUBiP of Ukraine "Crimean Agro-Technological University"
Accounting and Audit Economics of Enterprise Management Agronomy Veterinary Medicine Geodesy, Cartography and Land Management Processes, Machines and Equipment of the Agroindustrial Production Food Technologies and Engineering Forestry and Landscape Architecture
SSD of NUBiP of Ukraine "Berezhany Agro-Technical Institute"
Accounting and Audit Economics of Enterprise Processes, Machines and Equipment of the Agroindustrial Production Power Engineering and Electro Technical Systems in Agroindustrial Complex Forestry and Landscape Architecture Ecology, Environmental Protection and Balanced Nature Management
SSD of NUBiP of Ukraine "Nizhyn Agro-Technical Institute"
Accounting and Audit Management Processes, Machines and Equipment of the Agroindustrial Production Power Engineering and Electro Technical Systems in Agroindustrial Complex
SSD of NUBiP of Ukraine "Nemishayevo Agro-Technical College"
Processes, Machines and Equipment of the Agroindustrial Production Power Engineering and Electro Technical Systems in Agroindustrial Complex Agronomy
SSD of NUBiP of Ukraine "Crimean Agro-Industrial College"
Accounting and Audit Agronomy Plant Protection
SSD of NUBiP of Ukraine "Irpin College of Economics"
Accounting and Audit Merchandising and Commercial Entrepreneurship
SSD of NUBiP of Ukraine "Zalishchyky Agrarian College named after Khraplyvyy"
Accounting and Audit Agronomy

Southern Affiliate "Crimean Agro-Technological University" of NUBiP of Ukraine conducts training of specialists at 6 faculties: Agronomy; Mechanization of Production and Technology of Agricultural Products Processing; Veterinary Medicine; Forestry, Landscape Architecture and Hunting; Land Management and Geodesy; Economics. 34 department chairs and their 19 structural subdivisions at agrarian, industrial enterprises, organizations and scientific-and-research organizations provide the academic process. Structure of SA "CATU" of NUBiP of Ukraine, volumes of professionals training, main characteristics of the teaching staff are given in Table 7.4. Directions (specialties) for professionals training of EQL "Bachelor", "Specialist" and "Master" are given in Table 7.6.

SA "CATU" of NUBiP of Ukraine foresees simultaneous obtaining of the second higher education in economic specialties.

Training specialists of Master EQL in SA "CATU" is conducted in 10 specialties.

SA "CATU" of NUBiP of Ukraine conducts training of PhD students and Doctorate students through specialized scientific councils in the following specialties: 05.05.11- "Machines and Means of Mechanization for Agriculture"; 06.01.09 – "Plant Science", 06.01.05 – "Selection and Seed Science" (Table 7.10).

The following institutions participate in the process of training professionals: Scientific-Research Institute of Seed Science, which includes problem laboratories of forestry and landscape architecture, mountain and recreation forestry, veterinary neonatology, viticulture and wine-making, ether-oil and medical herbs; 69 scientific-research laboratories; Scientific-Research Station of Mountain Gardening and Forestry "Foros"; collectional plot of grape; advisory centers in districts of AR of Crimea; 11 national, 5 foreign scientific and scientific-research units that provide conduct of education, production and pre-diploma practical trainings of students.

Main characteristics, directions and specialties for training professionals in respective EQL at NUBiP of Ukraine Regional Higher Educational Establishments of I-IV accreditation levels are given in Tables. 7.4; 7.6.

The University maintains close relations with Ghent University (Belgium), Humboldt University (Germany), Wageningen University (Netherlands).

The international activity of the Regional HEE is directed towards their integration into the European educational dimension, improving qualification of pedagogical and scientific-pedagogical staff to the world level with the help of internship in European Universities, conduction of practical training of students at leading agricultural enterprises of Europe, providing opportunities of obtaining higher education abroad for successful students, international scientific cooperation. List of the main directions of international activity and programmes, that are realized in NUBiP of Ukraine HEE, are given in Table 7.7.

Table 7.6. Directions and specialties for training specialists at NUBiP of Ukraine regional HEE of I-IV accreditation levels

Knowledge branch, Directions, Specialties	SA "Crimean Agro- Technological Univer- sity" of NUBiP of Ukraine	Separated Units of NUBiP of Ukraine											
		Berezhany Agro- Technical Institute	Nizhyn Agro- Technical Institute	Irpin College of Economics	Zalishchyk Agrar- ian College named after Khraplyvi	Nemishaev Agro- Technical College	Crimean Agro- Industrial College	Bobrovytsya Col- lege of Economics and Management named after O. Maynova"	Boyarka College of Ecology and Natural Resources	Pryberzhany Agrarian College	Mukachevo Agrar- ian College	Vrimean Voca- tional Technical School of Agricul- tural Hydromello- ration and Mecha- nization	Bakhchysaray Construction Vo- cational Technical School
1	2	3	4	5	6	7	8	9	10	11	12	13	14
0304 Law													
– Law study													
0305 Economics and Entrepreneurship													
– Economics of Enterprise	B,S,M	JS,B,S			JS	JS		JS					
– Finance and Credit	B,S,M			JS	JS	JS		JS			JS		
– Accounting		JS	JS	JS	JS		JS	JS			JS		
– Accounting and Audit	B,S,M	B,S	B,S	B	B		B						
– Commercial Activity					JS							JS	
– Marketing Activity				JS									
– Assessment Activity				JS			JS		JS				
– Merchandising and Commercial activity				JS									
6.030502 – Economical Cybernetics	B												
6.030504 – Economics of Enterprise	B	B											
6.030508 – Finances and Credit	B												
6.030509 – Accounting and Audit	B	B	B	B	B		B						
6.030510 – Merchadising and Commercial Entre- preneurship				B									
0306 Management and Administering													
– Management and Administering			B										
– Management of Organization	S,M		S										
– Organization of Production								JS	JS				
6.030601 – Management	B		B										
0401 Natural Sciences													
– Ecology, Environment Protection and Balanced Nature Usage	B	B											
– Applied Ecology		JS			JS				JS				
0501 Informatics and Computer Techniques													
– Servicing of Programme Systems and Complexes									JS				
– Servicing of Computer Systems and Networks		JS	JS	JS	JS					JS			

1	2	3	4	5	6	7	8	9	10	11	12	13	14
0502 Automation and Control													
– Installation and servicing means of system of automation of technological production			JS										
0517 Food Industry and Agricultural Products processing													
– Food Technology and Engineering	B												
– Technologies of Brewing Products and Viniculture	S,M												
– Technology of Fats and Fat Substitutes	S,M												
– Technology of Preservation, Conservation and Processing of Milk	S												
0601 Construction and Architecture													
– Construction and Operation of Buildings and Facilities													JS
– Servicing Equipment and Gas Supply Systems													JS
– Trimming of Buildings and Facilities and Construction Design													JS
– Architectural Design and Interior													JS
– Construction, Servicing and Maintenance of Hydrometeorological Facilities and systems												JS	
0701 Transport and Transport Infrastructure													
– Servicing and Maintenance of Vehicles and Engines		JS											
– Traffic Organization and Control						JS							
– Organization Shipment and Management in Transport			JS										
0801 Geodesy, and Land Utilization													
– Geodesy, Cartography and Land Utilization													
– Land Utilization and Cadastre	S,M												
– Land Management													
6.080101 – Geodesy, Cartography and Land Management	B								JS			JS	
0901 Agriculture and Forestry													
– Production and Processing of Plant Products					JS	JS	JS	JS		JS	JS		
– Plant Protection							B						
– Fruit Growing and Viticulture	S,M												
– Industrial Floriculture									JS				
– Organization and Technology of Managing Farms					JS		JS				JS		

Extension tab. 7.6

1	2	3	4	5	6	7	8	9	10	11	12	13	14
6.090101 – Agronomy	B,S,M				B	B	B						
– Production and Processing of Animal Husbandry Products	B					JS		JS		JS			
– Forestry and Landscape Architecture	B	B											
– Landscape Architecture	S												
– Forestry	S								JS				
– Green Construction and Landscape Architecture		JS							JS				JS
0902 Fishery and Aquaculture													
– Fish Farming and Aquaculture						JS							
1001 Machinery and Energy Power of Agricultural Production													
– Operation and Maintenance of machinery and equipment of agro-industrial production		JS	JS			JS				JS		JS	
– Energy Power of Agricultural Production		S	S										
– Mechanization of Agriculture	S,M	S	S										
– Installment, Servicing and Maintenance of Electrotechnical systems in AIC		JS	JS			JS				JS			
6.100101 – Energy Power and Eletrotechnical systems in AIC	B	B	B			B							
6.100202 – Processes, Machines and Equipment of AIC	B	B	B			B							
1101 – Veterinary Science													
- Veterinary Medicine	S,M					JS				JS	JS		
6.110101 – Veterinary Medicine	B												
1401 Service Sphere													
– Tourist Service											JS		

B – Bachelor, JS – Junior Specialist, S – Specialist, M - Master

Table 7.7. Main directions of international activity of NUBiP of Ukraine HEE

Regional HEE	Countries in cooperation	Cooperation directions
SSD of NSSD of NUBiP of Ukraine "Berezhany Agro-Technical Institute"	Switzerland, Austria, Hungary	Alternative energy sources; biological farming (in the framework of Ukraine Switzerland Project Eco Lan - Ukraine)
	Germany	Internship of students and teachers abroad. Programme "Biogas for Ukraine"
SSD of NUBiP of Ukraine "Nizhyn Agro-Technical Institute"	Great Britain, Netherlands, Germany, Denmark, France	Practical training of students and teachers at Programmes S&A, G&S, HOPS and Concordia; training of students at Asmildkloster Agricultural Academy in Wiborg ; cooperation with companies "Champagnese-rial", "Numens", "Aventis"
	Denmark, Germany, Poland	Internship and practical training of students and teachers
	USA, Great Britain	Seminars on the methods of teaching English
	Russia, Belarus, Kazakhstan	Research-cultural and sport cooperation
SSD of NUBiP of Ukraine "Boyarka College of Ecology and Natural Resources"	Germany	Practical training at farms
SSD of NUBiP of Ukraine "Nemishayevo Agro-Technical College"	The Netherlands	Practical Training at farms, agricultural enterprises;
SSD of NUBiP of Ukraine "Crimean Agro-Industrial College"	Germany	Cooperation with Fachhochschule, Soest Programme "Training during the work with the union of Baden-Wurtemberg (LVEO)"
SSD of NUBiP of Ukraine "Zalishchyky Agrarian College named after Khraplyvyy"	Canada, Check Republic, Germany, Moldova	Cooperation with public College named after Grent McUen; firms "Moravosid", "Gavo"; probation of corn hybrids
	Great Britain, Sweden	Internship at farms
	Germany, Australia	Internship at farms
	Poland	Exchange of students and teachers according to the programme of partnership ties with educational institutions of the Union of tillage schools, Namysliv

7.3. Bases for Student Practical Training

Bases for students' practical training of NUBiP of Ukraine are the educational, educational-scientific, educational-scientific-production laboratories of Basic Institution of NUBiP of Ukraine, its separate divisions (SD), and, first of all, the university scientific-research stations (SRS), where laboratory work, practical classes, educational, technological, scientific-research, pre-diploma and other practices are conducted in such fields: plant growing, cattle farming, processing and conservation of plant products, technology of biodiesel production, breeding animals and fish, devel-

opment of methods of diagnostics and prophylactics of animals' diseases, technology of reparation work, maintenance and testing of agricultural machinery, forestry, woodworking industry, hunting and its legal provision, economics, accounting and audit, marketing and management in the agrarian field of production etc.

National University of Life and Environmental Sciences has its own base for conduction of practical trainings (Table 7.8):

- 3 research stations – SD of NUBiP of Ukraine "Agronomy Research Station" and SD of NUBiP of Ukraine "Boyarka Forestry Research Station" (Kyiv region) and Scientific-Research Station of Mountain Forestry and Gardening "Foros" (AR of Crimea);
- 6 Education-Research Farms (ERF) – SD of NUBiP of Ukraine "Velyka Snitynka TRF named after O.V. Muzychenko", SD of NUBiP of Ukraine "TRF "Vorzel" and TRF of SSD of NUBiP of Ukraine "Nemishaeve Agro-Technical College" in Kyiv Region, SD of NUBiP of Ukraine "Educational-Research Breed Poultry Plant named after Frunze", TRF of the SSD of NUBiP of Ukraine "Zalishchyky Agricultural College named after Khraplyvyy" and TRF of the SSD of NUBiP of Ukraine "Nizhyn Agro-Technical Institute" (Chernihiv Region);
- Special bases for practical training of NUBiP of Ukraine regional higher educational establishments of I-II accreditation levels;
- NUBiP of Ukraine Training-Scientific Center of Biology and Ecology of Subtropical Plants and Landscape Science (Yalta, AR of Crimea);
- NUBiP of Ukraine botanical garden.

General area of lands, subordinated to the indicated structures, is more than 35,000 hectares, including approximately 18,000 hectares of forests, research fields, greenhouses, animal complexes, machine-tractor parks, workshops, yards and shops, etc.

Farms of the University are situated in different climatic zones of Ukraine: Polissya, Forest-steppe, Steppe and Subtropics (AR of Crimea). Particular feature of practical training bases of the University is that they have respective department chairs and affiliates, and also more than 50 education-production and education-scientific-production laboratories, where students have practical laboratory lessons, educational and production practical training.

In SD of NUBiP of Ukraine "Agronomy Research Station" (Table 7.8) students study modern technologies in plant science and directly participate in growing best specimens of winter and spring crops, fruits and vegetables and best young plants of fruit crops. Station has a bank of agricultural crops sorts, that consists of approximately 300 sorts of wheat, barley, peas, oats, corn, sugar beets, rape, soybeans, potatoes, vegetables, etc., and it also has an education-production departments on primary plant and animal products procession.

SD of NUBiP of Ukraine "Boyarka Forestry Research Station" (Table 7.8), consists of 5 forestries and 2 timber processing departments, and also **University botanical garden**, which comprises more than 700 species of trees and bushes. These NUBiP of Ukraine units are wonderful base for training students of the Faculty of Forestry, Park-Gardening and Landscape Architecture. Students study modern technologies of forest planting, forest protection from pests, look after forest, timber cutting and timber procession.

SD of NUBiP of Ukraine "Velyka Snitynka Training-Research Farm named after O.V. Muzychenko" (Table 7.8) has education-scientific-production laboratories on plant and animal science. Wheat, barley, peas, oats, triticale, buckwheat, vetch, sugar beet, rape,

corn, potatoes, vegetables, forage crops, perennial and yearly grasses are grown at the TRF. Farm has a department chair on testing and practical training of technics, which provides with the help of students servicing of agricultural technics and electrical equipment at the farm, and also procession enterprises – departments on cheese, sausage, macaroni and bakery production, equipped educational laboratories, etc.

SD of NUBiP of Ukraine "Training-Research Farm "Vorzel" (Table 7.8) is specialized in dairy and meat animal husbandry. During practical trainings students can learn the whole cycle of breeding Ukrainian Black-and-White breed and Angus breed of cattle, growing vegetables in greenhouses. Farm grows oats, potatoes, vegetables, corn, perennial and yearly grasses.

In Crimea there is also **SD of NUBiP of Ukraine "Education-Research Breed Poultry Plant named after Frunze"** (Table 7.8), its main kind of activity is selection and breeding of breed poultry for egg direction. Here students learn technologies of poultry breeding, milk production at the farm. Farm grows barley, oats, corn, yearly grasses, etc.

Training-Scientific Center of Biology and Ecology of Subtropical Plants and Landscape Science is located in Nikita (Yalta) on the territory of Nikita Botanical Garden – National Scientific center of the UAAS in the laboratory building. Center provides practical training for students and conducts scientific research on biotechnology, ecology, recreation forestry, natural reserve, subtropical plant science, landscape architecture and park-gardening, taking into account conditions of subtropics.

Education-production practical trainings of students from **SSD of NUBiP of Ukraine "Berezhany Agro-Technical Institute"** are conducted on the basis of dendro parks "Berezhanskyy", "Raivsky Park", education-production base "Sad", seed-plot of decorative cultures, education-research laboratories on biogas and biofuel production, production shops.

SSD of NUBiP of Ukraine "Nizhyn Agro-Technical Institute" conducts practical training of professionals with the help of Training-Research Farm (Table 7.8) with plant science laboratory, farm with box and without tie animal keeping and De Laval milking equipment. Training-Research Farm grows barley, peas, oats, corn, rape, yearly grasses.

Agricultural lands, collection-research field, education-scientific-production laboratories of mycology, fish-breeding, animal husbandry, poultry-breeding, pond farm (19,6 hectares), machine-tractor yard with workshops, mechanized grain stock provide practical training of students from **SSD of NUBiP of Ukraine "Nemishaevo Agro-Technical College"** (Table 7.8). Training-Research Farm of the College grows wheat, oats, potatoes, vegetables, corn, perennial and yearly grasses; departments of fish insemination and fruit procession are also functioning.

Base for education-production training of students from **SSD of NUBiP of Ukraine "Zalishchyky Agricultural College named after Khraplyvyy"** is its own Training-Research Farm (Table 7.8), laboratory of ecological expertise, collection-research field, arched greenhouse. Training-Research Farm grows wheat, barley, peas, corn, buckwheat, potatoes and vegetables.

University introduces modern agrotechnologies at the indicated bases of the practical training with the help of cooperation with leading foreign companies like: "John Deer" (USA), "Valtra Valmet" (Finland), "M&P Farma" (Switzerland), ACCO (Denmark), "Alfa Laval Agri in Ukraine" (Sweden), "VUZT" (Czech Republic), "FML" (Germany), that give University modern technologies, equipment and agricultural machinery, etc.

Table 7.8. Bases for student practical training of the National University of Life and Environmental Sciences of Ukraine (at January 01, 2011)

NUBiP of Ukraine bases of practical training	Indicators				
	Number of places in the dormitory	Number of species of agricultural crops, that are grown	Number of cattle (including cows), pigs and poultry	Acreage of plowed plots, hectares	Acreage, hectares
SD of NUBiP of Ukraine "Agronomy Research Station"	120	15	476 (cattle) 222 (cows) 112 (pigs)	936	1024
SD of NUBiP of Ukraine "Boyarka Forestry Research Station" and NUBiP of Ukraine Botanical garden	200	near 700 species of trees and bushes	–	37	17940
SD of NUBiP of Ukraine "Velyka Snitynka TRF named after O.V.Muzychenko"	100	18	1827 (cattle) 720 (cows) 658 (pigs)	2605	2960,6
SD of NUBiP of Ukraine TRF "Vorzel"	110	9	489 (cattle) 210 (cows)	475	800
SD of NUBiP of Ukraine "Education-Research Breed Poultry Plant named after Frunze"	60	13	901 (cattle) 414 (cows) 121 (pigs) 116,3 thousands (poultry)	2359	2999
SSD of NUBiP of Ukraine "Berezhany Agro-Technical Institute"	300	12	-	11,000	11,037
TRF SSD of NUBiP of Ukraine "Nizhyn Agro-Technical Institute"	720	8	39 (cattle) 10 (cows) 34 (pigs)	698,24	1052,01
TRF SSD of NUBiP of Ukraine "Nemishayevo Agro-Technical College"	1120	12	338 (cattle) 135 (cows) 15 (pigs) 100 (quail)	608	902,6
TRF SSD of NUBiP of Ukraine "Zalishchyky Agricultural College named after Khraplyvi"	900	8	–	289	1111
SSD of NUBiP of Ukraine "Crimean Agro-Industrial College"	950	9	–	85	103
SSD of NUBiP of Ukraine "Boyarka College of Ecology and Natural Resources"	445	14	–	15	60
SSD of NUBiP of Ukraine "Pryberezhnensky Agricultural College"	420	5	–	378	489
SSD of NUBiP of Ukraine "Bobrovysya College of Economics and Management named after O. Maynova"	720	11	–	–	3
SSD of NUBiP of Ukraine "Mukachevo Agricultural College"	300	6	–	80	100
SSD of NUBiP of Ukraine "Bakhchysaray Construction Vocational Technical School"	250	–	–	–	–
SSD of NUBiP of Ukraine "The Crimean Vocational Technical School of Hydro-melioration and Mechanization of Agriculture"	–	3	–	40	108

Bases for students' practical training are the leading institutions, enterprises, organizations of any kind of property in Ukraine and abroad which have proper conditions for students' practical training according to the requirements of educational-professional programs of specialists' training. The university signs agreement with such bases of practical training and forms passport which is kept at the academic department and

dean's offices of the university. The term of agreements are established for the period of conducting the concrete practical training or for a period of 5 years.

7.3.1. International Programmes for Student Practical Training

Students and PhD students of the University have practical training not only at the own bases, at leading agricultural enterprises and farms of Ukraine, but also abroad. Main international programmes of the student practical training are the following:

- **Programmes of seasonal agricultural works in EU countries** – Germany, Switzerland, Czech republic;
- **International programmes on gaining farming experience:** programme for production internship of students and farmers at the big enterprises of the western Lands of Germany (**German Rural Association**); programme of Farmers Association of Denmark; **Karl Hof's Farm** – programme of practical training through Germany's scheme of permissions for students of agricultural European universities; **ATLANTIS** – programme of practical training at agricultural enterprises and enterprises on procession of Norway agricultural products, etc.;
- **Programmes of the International Farm Organizations: Amitie-Sans Frontieres** (Friendship Without Borders, France) - programme of the association of Poitu Charon with the regional council and agricultural chamber support ; **AGROIMPULSE** – internship programme coordinated by the Swiss Union; Agency of agricultural youths exchanges and educational programmes of the Netherlands and others;
- **Internship (training) programmes at the partner-universities of foreign countries at support of international organizations: MAST** – Minnesota State University (USA); training and internship at programmes of training farmers of agricultural colleges in Denmark; Agency of agricultural youth exchange and educational programmes of Kingdom of Netherlands etc.

In general, for the last 10 years, achievements of the National University of Life and Environmental Sciences of Ukraine in the development of the practical component in training specialists abroad are:

- 860 scientific-pedagogical staff had internship (training) at partner-universities in the framework of joint programmes (projects) and participated in international conferences;
- More than 600 students and PhD students had internship (training) at the foreign partner-universities in exchange programmes;
- 6500 students had educational and production practical training in the countries of Western Europe and Northern America.

7.4. Scientific-Research Work

The Master programmes participants can work and conduct the corresponding researches at the problematic scientific-research laboratories with modern equipment and computer technique.

The scientific-research work at the university is conducted by 12 scientific-research institutes (SRI), Ukrainian laboratory of quality and safety of AIC products, SRI of Seed Growing (SA of NUBiP of Ukraine "CATU"), 23 problematic scientific-research laboratories, 3 research stations, 6 teaching-and-research farms (tables 7.1; 7.8)

The university scientists conduct researches in the following directions:

Biologization of Agriculture: development of the adaptive tillage systems in Ukraine, improvement of methods of selection and seed growing in the field of plant growing, breeding in animal husbandry; provision of proper veterinary and sanitary conditions in Ukraine etc.

Nature Protection and Sustainable Society Development, Biotechnologies: environmental protection, ecological safety of agricultural and food products, its standardization and certification according to the national and international standards.

Quality, Biosafety, Certification and Standardization of Technologies of Production of Agricultural and Food Industry: quality and biosafety of agricultural and food industry, its standardization and certification according to national and international standards.

Mechanization and Modern Management of Agricultural Production: development of new energy-saving production technologies, conservation and processing of agricultural products, raising its reliability and effectiveness of agricultural machinery, its modernization and improvement, system of precise tillage etc.

Power Engineering and Automation in Agro-Industrial and Nature Protection Spheres: development of the newest systems of energy-saving production technologies on the basis of traditional and renewable energy sources, creation of intellectual systems of energy supply of technological processes in AIC, raising reliability and effectiveness of centralized systems of energy supply in rural regions etc.

Economics, Marketing, Management, Biosocial Economics: home and foreign markets, forecasting of marketing changes at markets, financial and commodities' flows etc.

Innovative Activity and international Standards of Life Quality: formation of normative-and-legal base in the field of innovative activity, promoting development of innovative infrastructure, information provision of subjects of innovative activity, training staff in the field of innovative activity.

Rationalization of Social Development of Rural Development: integrated approach to the agrarian production development, service and social-household services in the rural area.

Development of new systems of information-consultative provision: methodical maintenance of agricultural advisory services' activity, training agricultural specialists – consultants in the field of managing land use, development of rural areas, economic law etc.

Informational and Telecommunication Provision of Agro-Industrial and Nature-Protective Branches of Economy: development of the concepts and models of the system of information-and-analytical provision of agro-industrial complex of Ukraine, development and introduction of the effective models of continuous education in the field of AIC.

Researches of scientists of the SRI of Natural and Humanitarian Sciences are directed at conduction of fundamental and applied researches in the field of chemistry, physics, mathematics, sociology and linguistics.

Researches of scientists of SRI of Technologies and Quality of Animal Husbandry Products and Fish Culture are aimed at solving the problems of full-scale feeding of farm animals, efficient use of fodders, improving of productive and breeding qualities of cattle breeding, development of resource-saving technologies for clean milk, meat, eggs, fish etc.

Scientists of Scientific Research Institute of Animal Health conduct fundamental and applied researches in the framework of scientific and technical program "For the maintenance of veterinary and sanitary prosperity in Ukraine."

The work of scientists of SRI of Forestry and Decorative Horticulture is directed at fundamental and applied research on current issues of forestry science, landscape management and protection of the environment, increasing of productivity of forest ecosystems and forest-agricultural landscapes zonal optimization.

Activity in the field research and experimental design of SRI of Technique and Technology is aimed at the creation of new resource-saving technologies in industry and AiC within the state scientific-and-technical program "Technical facilities of the new generation for agricultural production."

Scientific-research and experimental-design work of SRI of Electric and Energy power systems are aimed at the development of newest energy supply systems based on conventional and renewable energy sources, creation of intellectual energy systems of technological processes in AiC, improving reliability and efficiency of centralized power in the rural regions etc.

Scientific-research work of SRI of Economics and Management of agro-industrial production is aimed at: the study of substantiation of the directions of establishment of social partnership and development of social and labor relations in rural communities.

Work in the field of scientific-research and experimental-design of SRI of Plant Growing and Sustainable Nature Use is aimed at the development of zonal models of ecological agriculture, biological technology of cloning plants and defining the GMO, the improvement of biological methods of pest and disease control, design of new resource-saving ecobiotechnologies in bioenergetics, industry, AiC and municipal utilities.

Research-scientific work of the Ukrainian Laboratory of Quality and Safety of AIC Products is performed in the following areas:

- Investigation of biocenoses state in terms of safety, fertility and self-recovering analysis of the impact residues of xenobiotics on indicators of quality and product safety of agrocenoses;
- Development and application of modern methods of molecular diagnostics, DNA technologies and genetics in crop, livestock and environmental spheres;
- Analysis of critical points of getting quality and safe agricultural products;
- Modern methods of research of agricultural raw materials, products and facilities of agrocenosis;
- Development of the resource-saving environment protection technologies and schedules of receiving agricultural products;
- Development of Quality Management Systems (QMS) in agricultural and nature protective universities.

Researches of scientists of SRI of Land Use and Regulation of Property and Land Relations are directed at applied sciences of local research on actual issues of land management, land use, land cadastre, land resources management, land evaluation, modeling of transformation and degradation processes of reproduction of land fertility, legal regulation of relations in agriculture, land use while addressing environmental, property, nature protection and other problems.

Researches of scientists of the Ukrainian SRI of Agricultural Radiology are aimed at monitoring agricultural lands and radio control of products in the contaminated areas.

The researches of Ukrainian SRI of Bioresources Quality and Life Safety are performed in the direction of studying the physical-chemical properties and biological efficiency of liposomal forms of drugs based on milk phospholipids, creating new varieties of winter, spring rape and winter wheat with high adaptive capacity to biotic factors and technologies of their cultivation, development of bionanotechnologies to extend term of preservation and safety of food, at scientific substantiation, sanitary provision and development of technologies of feed additives of fish and other raw materials.

Research work of the Ukrainian Institute of Information and Telecommunication Provision of Agricultural and Environmental Economy branches is directed at the development of concepts, models of systems of information- and-analytical support for AiC, designing, creating and filling the bases of input information necessary for the analysis and calculations, the use of modern technologies of processing large amounts of data, including GIS, implementation of the modules of subsystem of information provision with reference to the geospatial environment, development of the concept, architecture and creation of a network of information resources institutions in agricultural science, education, advisory activity, development and implementation of effective models of continuous education in the field of AiC.

Researches of the Southern branch of NUBiP of Ukraine "Crimean Agrotechnological University" are conducted on the basis of its educational departments, Research Institute of Seed and two problematic R & D laboratories: sorghum and neonatal farm animals.

The main directions of scientific activity of SD "SRI of Standards and Technologies of environmentally safe and organic products" are the development of newest science-absorbing technologies and technical means for production of food for children of different ages and health status using environmentally friendly and organic vegetable, animal raw materials, water biological resources, aquaculture products, improving the regulatory basis according to the European Union in the field of standardization, metrology, certification, accreditation, quality management of quality and safety in the production, designing objects of processing with the use of innovative technologies, scientific and technical support for enterprises in processing of agricultural products at their request, introduction of scientific-research and design work in the production process etc.

Scientific-research developments of the scientists of the University are aimed at fundamental studies and applied research and development in the field of plants and animals biology, biotechnology, chemistry, applied mechanics and physics, ecology, economics, pedagogics etc.

Priority of the university researches is proved by the obtained 2,255 copyright certificates, patents of invention and useful models during the last 10 years. In this period 1,044 scientific development of the university scientists were introduced into the production process.

Table 7.9. Basic indexes of research

Index	Year				
	2006	2007	2008	2009	2010
Completed topics of research work	87	91	183	100	143
New technology (process technology) developed	130	183	171	169	190
Created varieties, hybrid crops	8	11	6	7	11
Submitted varieties in State Committee of Variety Testing	8	11	7	11	5
Developed vaccines, serums, drugs	1	1	2	3	4
Developed new types of equipment (machinery, equipment, working)	160	177	158	118	100
Created substances by the chemical methods	23	18	16	24	30
Considered and recommended for replication recommendations:					
– by Ministries and departments of Ukraine	45	20	36	31	67
– by local agricultural authorities, problematic scientific councils of SRI	47	29	47	45	8
Patents, inventor's certificate	234	460	354	285	376

National University of Life and Environmental Sciences of Ukraine serves as the base for many international and domestic conferences, symposiums, congresses, seminars etc. Over the past 10 years, 1288 scientific and practical conferences, symposiums, seminars, of which 382 were International, 195 were nationwide ones have been organized and conducted.

The university scientists prepared for publication and published 739 monographs, 503 manuals, 1,819 textbooks and reference books, dictionaries and brochures published over 36,700 articles in scientific journals, including SF of NUBiP of Ukraine "CATU" – they published 79 monographs, 42 manuals, 54 educational textbooks, published 2,990 scientific articles.

The university publishes the journal of scientific papers "Scientific Bulletin of the NUBiP of Ukraine" series (168 issues published) and the Journal "Bioresources and Nature Management," which included the list of professional publications in Ukraine; academic-production journal "Modern poultry". The university staff publishes the bulletin of the completed scientific development "Science and innovations at NUBiP of Ukraine". On the site of NUBiP of Ukraine they posted electronic journals: "The scientific report of the National University of Life and Environmental Sciences of Ukraine", approved by Higher Attestation Commission (HAC) of Ukraine as a scientific professional journal of agricultural, veterinary, biological and technical sciences, "Energy and Automation," which has been approved by HAC of Ukraine as the scientific journal of Engineering, began publication of international electronic journal "Bioresources of the planet and quality of life." At the University they created an electronic edition of "Scientific papers for students (trainees) of NUBiP of Ukraine."

Together with the Institute of Microbiology and Virology named after D.K. Zabolotny of NAS of Ukraine the university issues "Microbiological journal" with PE "Publishing establishment" Parallel", scientific journal "AIC food industry." In SA of NUBiP of Ukraine "CATU" they published the journal "Scientific papers of the Southern branch of NUBiP of Ukraine "Crimean Agrotechnological University".

Achievements of the university are constantly represented at the international agricultural exhibitions, fairs and annual international exhibitions of educational institutions, as a result of which NUBiP of Ukraine for the last five years was marked by three honorary titles of "Leader of modern education", one honorary title of "Leader of the National Education", 40 medals including 31 gold, 5

silver, 1 bronze, 3 gold medals "Leader of the agroindustrial complex of Ukraine", 347 diplomas, 63 certificates, 344 gratitudes.

Preparation of candidates and doctors at the University is realized through the center of training and certification of scientific and pedagogical staff.

At the university Doctors are prepared in 59 specialties, PhD - in 77 of such branches of science: physics and mathematics, chemical, biological, technical, agricultural, historical, economic, philosophical, legal, educational, veterinary ones.

At the university 21 specialized scientific councils for the defence of dissertation works in seven branches of science and in 48 specialties are functioning (Table 7.10).

Table 7.10. Scientific councils in the field of thesis defence of National University of Life and Environmental Sciences of Ukraine

Code of specialized scientific council	Code and name of specialty
1	2
Д 26.004.01	08.00.03 – Economics and management of national economy 08.00.04 – Economics and business management (by kinds of economic activity) 08.00.06 – Economics of nature and environment protection (Economics)
Д 26.004.02	06.01.11 – Phytopathology (agricultural sciences, biological sciences) 16.00.10 – Entomology (Agricultural Sciences)
Д 26.004.03	16.00.01 – Diagnosis and therapy of animals 16.00.02 – Pathology, oncology and morphology of animals 16.00.03 – Veterinary Microbiology, epizootiology, infectious diseases and immunology (veterinary science)
Д 26.004.04	06.01.03 – Soil science and agrophysics 06.01.04 – Chemistry 06.01.06 – Vegetable growing (agricultural sciences)
Д 26.004.05	06.02.01 – Breeding and selection of animals 06.02.02 – Livestock feeding and forage technology 06.02.04 – Technology of production of livestock products (agricultural sciences)
Д 26.004.06	05.05.11 – Machines and means of mechanization of agricultural production 03.00.20 – Biotechnology (Engineering)
Д 26.004.07	05.09.03 – Electrotechnical complexes and systems (Engineering)
Д 26.004.08	03.00.04 – Biochemistry (biological, veterinary and agricultural science)
Д 26.004.09	06.03.01 – Forest crops and phytomelioration (agricultural and biological sciences) 06.03.02 – Forest management and forest taxation (agricultural sciences) 06.03.03 – Forestry and silviculture (agriculture)
Д 26.004.10	06.01.01 – General farming 06.01.09 – Plant science 06.01.13 – Herbology 06.01.15 – Primary processing of plant products (agricultural sciences)
К 26.004.11	05.23.06 – Technology of wood processing, furniture and products made of wood
Д 26.004.12	16.00.06 – Hygiene and animal health sanitary (veterinary and agricultural sciences) 16.00.09 – Veterinary-sanitary expertise (veterinary sciences)
Д 26.004.13	16.00.07 – Veterinary obstetrics 16.00.05 – Veterinary Surgery (veterinary sciences)
Д 26.004.13	16.00.07 – Veterinary obstetrics 16.00.05 – Veterinary Surgery (veterinary sciences)

1	2
Д 26.004.14	16.00.11 – Parasitology 03.00.13 – Human and animal physiology (veterinary sciences)
Д 26.004.15	03.00.20 – Biotechnology (agricultural sciences) 03.00.16 – Ecology (biological and agricultural sciences)
К 26.004.16	12.00.06 – Land law, agrarian law, environmental law; nature resources law 12.00.07 – Administrative law and process, financial law, information law (legal sciences)
Д 26.004.17	08.00.08 – Money, finance and credit 08.00.09 – Accounting, auditing and analysis (by kinds of economic activity)
Д 26.004.18	13.00.02 – Theory and methods of teaching (agricultural subjects) 13.00.04 – Theory and methods of professional education 13.00.10 – Information and communication technologies in education (pedagogic sciences)

7.5. Scientific-Innovative Activities at NUBiP of Ukraine

The University is involved in the development of infrastructure, provision of scientific-advisory, information, legal and other services to producers and consumers of agricultural products, as well as in the implementation of completed scientific developments and the advanced experience in the areas of agricultural production by:

- training of specialists for work at the local executive bodies and local authorities, training and professional development - expert consultants information and consultation services;
- methodic, information and communications support activities of information-advisory services;
- coordination of consulting services and centers;
- information-consulting provision of needs of agricultural enterprises, associations and organizations of AIC and population, including rural youth;
- implementation of other activities that are of immediate practical interest and comply with the legislation.

The purpose of research and innovation activities of NAU of Ukraine is the creation of socio-economic, organizational and legal conditions for the effective reproduction, development and use of scientific and technical potential of the university, ensuring the implementation of modern environmentally friendly and safe, energy-saving technologies and production and sale of new types of the competitive products.

The relevant areas of scientific innovation and investment activities are:

- introduction of scientific developments of scientists of the university;
- work with leading research and educational institutions in Europe and the world;
- maintenance of joint projects and contracts aimed at globalization of the world science and practice of agricultural production in accordance with the standards of quality and safety of agricultural products of AIC, ISO, GLP, etc.;
- the dynamic implementation of scientific developments produced by doctoral candidates, post graduates and Masters in the system of structural scientific and research farms (SRF) and their companies with the aim of developing pilot programs, which serve as model examples for the agro-industrial sector of Ukraine;
- harmonization of Master's and post-graduate training based on the principle of professional development programs with mandatory implementation into production;
- A constant search marketing and strict implementation of the process with a clearly focused management aimed at preserving the balance of the environment;

- Development of the unified strategy on employment of highly trained specialists in agriculture, environmental-protective and other complexes of Ukraine.

Currently, the university operates 126 units of innovation, including 50 teaching and research and industrial laboratories, 2 educational-scientific-production centers, and 3 educational-scientific-production units.

The powerful innovative units of nationwide importance are:

- Ukrainian laboratory of quality and safety of agricultural products of AiC;
- Ukrainian Educational Research and Innovation Center of the latest agricultural techniques and technologies.

The introduction of scientific developments into production are implemented through:

- transfer to the Ministry of Agriculture and Food of Ukraine, Ministry of Education, Youth and Sports of Ukraine, other ministries, agencies, organizations and scientific and industrial, scientific and methodological recommendations on the development of agriculture and environmental complex state;
- participation in drafting the laws of Ukraine and normative documents that regulate the activities of agricultural production;
- transfer to the individual institutions and organizations the right to use intellectual property rights;
- probation of the developments of university scientists in teaching-and-research and production centers of NUBiP of Ukraine.

Implementation of innovative products of the university and the spread of information about scientific and educational research developments of the scientists engaged in innovation departments and investment, scientific and technical information, advisory centers in separate laboratories and in each regional center of the Autonomous Republic of the Crimea, which takes care of the Southern Branch of NUBiP of Ukraine "Crimean Agrotechnological University", public organization "Chernihiv Oblast Agricultural Advisory Service of Nizhyn Agrotechnical Institute of NUBiP of Ukraine" and public organization "Kyiv Regional Agricultural Advisory Service National aqueous University of Life and Environmental Sciences of Ukraine" created in 2009 and others.

In order to develop scientific, technology and innovation activity, effective and rational use of the existing scientific potential, the material and technical basis for the commercialization of research results and their implementation in the domestic and foreign markets department of innovation and investment they prepared a project of the scientific park " Biosafety of nature use. " The formed package of documents defines the procedure and sets the necessary measures to develop, create and realize an innovative product or product innovation and contains data on material-technical, financial and personnel resources necessary to carry the project.

In SD of NUBiP of Ukraine "Agronomic Research Station," they developed a project to create Agro-innovation center "XXI century European village," which assumes the function of modern energy-independent agricultural enterprise of the European level.

On the basis of SD of NUBiP of Ukraine "Agronomic Research Station" with biodiesel plant constructed earlier they will built in addition:

- barn for 500 dairy cows;
- biogas plant for energy conversion of wastes of agricultural and animal origin, energy crops and industrial organic wastes;

- slaughterhouse;
- production line milk processing capacity of 20 thousand liters per day.

Production will represent a closed cycle of renewable resources and it will be a universal supplier of various types of energy.

Leading scientists of the University also are active in the field of exchange of experience in research and innovation activity with leading scientists and international organizations, as well as participate in research programs of the European Union, innovative competitions, International Investment Forum "Integration and Partnership," fair of the innovative business projects agriculture in Ukraine, inventors' competitions and more.

In order to promote scientific innovation and investment activity in 2011 in NUBiP of Ukraine the International Science and Innovation Forum "VILLAGE OF THE XXI CENTURY" was conducted.

During the forum work the directors of the University ESI presented a number of scientific innovation and investment projects for agriculture and forestry, technical services, energy, engineering, food industry, computer control systems, environment-protective and social fields through which it is planned to develop common agreement on further their practical implementation and attracting domestic and foreign investments. The total number made up the considered 23 projects for future cooperation, of which 17 - scientific innovation (Table 7.11) and 6 investment projects. All of them were accepted for implementation during 2012-2017.

Table 7.11. List of international research and innovation projects presented at the International Scientific and Innovation Forum "Village of the XXI century"

The name of scientific innovation Projects	Cooperation
1	2
Creating the center of ecological and organic farming tion "Yevrovillage of the XXI century"	The company "TAN", Jana Strelnyk "Birch-Laska" (Austria), "Agrotel" (Germany), "Biomin" (Austria), "John Deere" (USA), Minahro Buy Ukraine, some institutions of NAS and NAAN Ukraine, universities of Iowa, Louisiana, Arkansas (USA), Wageningen (Netherlands), Ghent (Belgium), the university named after K. Timiryazev (Russia)
Reducing the risk of cross-border movement of radionuclides as a result of large radiation forest fires	Yale University (USA), Ministry of Emergency Situations, Ministry of Nature, Minagroprod of Ukraine etc.
Modern ecobiotechnologies of forest growing, wood processing and obtaining biofuels	Prof. Christian Koch (Germany), the company John Deere (USA), the company "Avante" (Ukraine), the bank "Tavrika" (Ukraine)
"John Deere Ukraine" – Ukraine NUBiP of Ukraine: nowadays and future	John Deere
Quality and safety of soils, of agricultural products: prospects for production of quality organic crop production	University of Iowa, Louisiana, Arkansas (USA), University of Wageningen (Netherlands)
Environmentallysafe food technologies and processing and packaging of livestock and crop production	Company "Leypurin" (Finland), University of Helsinki, University of Iowa, Louisiana (USA), etc.
Establishment of a reference enterprise of development of essential oil industry	"Apex" company, Ukraine

1	2
Establishment of an international educational and scientific consulting center of e-Extension in Ukraine	University of Nebraska, USA, director of e-Extension, prof. Dan Cotton, a national Centre for Food and Agricultural Policy (NCFAP) prof. Stanley Johnson, the National Association of Agricultural Advisory Services of Ukraine acting President R.Y. Korinets, Information and Counselling Centers of NUBiP of Ukraine
SMART GRID system – an innovative platform of energy development from renewable energy sources	Vinnitsa Agricultural University, University of Iowa (USA), Professor Z. Pastorek (Czech Republic), P. Yevych (Czech Republic), A. Bondarchuk (Ukraine)
Molecular diagnostics of diseases and biotechnologies in animal husbandry and veterinary medicine	Universities (colleges, faculties) of Iowa, Louisiana, Arkansas (USA), universities of Germany, Poland, Russia, Czech Republic, Netherlands etc.
Establishment of the center of legal maintenance of agricultural and natural resources sectors	Institute of Legislation of the Verkhovna Rada of Ukraine (Prof., Corresponding Member of NAS of Ukraine O. Kopylenko), etc.
Restoration of dairy cattle breeding in Ukraine using modern biotechnological methods	University of North Dakota and Louisiana State University (USA)
Creation of the Center for Applied Genetics, Biotechnology and Animal Reproduction	The company "SWINE Genetics International" (USA), SRP "Osetr", Company "RKP" Ltd, etc.
Creation of transfer center of modern breeding and transgenic technologies	"Pioneer", "Stein seeds" (USA), "Monsanto" (Ukraine), University of Iowa and Louisiana (USA) and others
The organization of modern equestrian sport complex "Holosievo" on the basis of NUBiP of Ukraine	Companies interested in the project
Using remote sensing data for agromonitoring and environmental sciences	Space Research Institute of NANU-NKAU, University of Maryland.
Prediction of food and agricultural resources, and biosocial and ecologically safe economics and management in rural areas	Institute of Research of Agricultural and Food Policy of FAPRI, University of Missouri, USA

Among the participants of the meeting there were representatives from several ministries of Ukraine: Agricultural Policy and Food, Ministries of emergencies, Foreign Affairs and Kyiv Region Administration as well as other public and private institutions and organizations. The representatives of major foreign companies ("John Deere", "Pioneer", "Amaco" (USA), "CARMAC Group SRL" (Italy) and other representatives of companies from Austria, Germany, Czech Republic, Poland Russia, France, Belarus, Finland, Netherlands, etc.) and universities in the area of Natural and Agricultural Sciences and Life Sciences and others took an active part in the event. Particular attention was focused on forestry, GIS technology, alternative energy, grain processing and livestock breeding and fish farming and wood waste, housing and so on.

The result of the forum activity was signing of the protocols of intentions, which confirmed the parties' desire to cooperate in certain fields of learning, innovation and investment activity on the basis of teaching and research farms of NUBiP of Ukraine of Ukraine.

In the nearest future based on these protocols of intentions an agreements on the ways of implementing these accords will be formed. In the basis of international cooperation the practical development of international standards for equipment and technology quality of life, environmental safety, biosocial economy and other standards lies.

7.6. Information-Telecommunication and information-Consultative Provision at NUBiP of Ukraine

The important role in training highly qualified specialists at NUBiP of Ukraine is played by a broad introduction to the educational process of information-and-communication technologies (IT).

Computer networks of BI of NUBiP of Ukraine and its regional universities are united into a single corporate network that includes more than 2,500 computers, dozens of servers, 14 sites of the corresponding university divisions.

All academic buildings, laboratories and student dormitories are connected to the base of the University fiber-optic computer network and have wireless connection to the Internet, providing the students' free access to Mastering the global information learning and research resources.

The University offers Master students the services of modern computerized library, which has 6 branches in educational and research institutes connected to a single computer network of the university and the Internet. Modern software allows the readers to get access to library electronic catalog of educational and scientific literature, the world's electronic resources, FAO (Food Agriculture Organization) of United Nations, as well as the full-text electronic materials - manuals, textbooks, scientific articles, multimedia materials etc.

In NUBiP of Ukraine educational portal based on distance learning platform Moodle (the original version of the Policy) is functioning on which the e-learning courses in all disciplines Master regulatory programs that involve the use by Master students distance learning technologies. Electronic learning courses allow to provide students with necessary learning and teaching materials in electronic form, to organize their practical and self-instruction work by means of specific individual tasks, monitoring and evaluating students' academic achievements, including computer testing, discussion of problems on forums and blogs, the formation of student learning communities using Web 2.0 technologies etc.

In training students (trainees) of Master courses the considerable attention is paid to the formation of one of the key competencies of modern professionals - information competence as an integrated personality formation that reflects its ability to determine information needs, finding information and working effectively with them in all their forms and presentation, ability to work with computers and telecommunications technologies, the use of them in educational, professional activity and everyday life.

To confirm the qualification of Masters in Mastering computer and knowledge of information technology at the university they introduced technological standards, similar to the international standard ECDL (The European Computer Driving Licence), which provides complex training of students using ICT in their professional work and testing for levels of "User" and "Professional user".

The 1st level of technological standard is achieved by studying special disciplines of ICT and systematic use by the teachers of distance technologies in educational process. It is tested by passing a special examination in the form of electronic testing by each student.

Students' Mastering of the 1st level of technological standard "user" implies the ability of future Masters:

- to use computer equipment;
- to use computer programs (working with files, running programs on

performance, the reference system, OS and other program for working with files, text editor, graphics editor, training presentations, web browser, e-mail, antivirus programs program archivers);

- to search for information data on the Internet;
- to use other electronic sources: electronic encyclopedias, electronic books, educational software of academic designation, electronic directories;
- to use IT to solve problems of academic disciplines;
- to communicate via e-mail, forum;
- to send by e-mail large volumes of information data;
- to use a spreadsheet to automate calculations and charting and graphs;
- to perform simple statistical analysis by IT;
- to use the database to find the desired information.

Reaching Master students of the 1st level of technological standard "User" is required for admission to Master courses.

Formation by the students of Master of the 2nd level of technological standards that "professional user" is by implementing innovative courses: "The world's information resources", "Geo-information technology and methods of the Earth remote sensing", "Information systems in the branch", "which allows to form the graduates of computer expertise for a successful future activities in the modern information society, the mandatory use of ICT in the preparation of the Master's work as a separate section, the introduction of the learning process of e-learning courses, distance learning technologies etc. In addition the University introduced a new training course for Masters research direction "Representation of the research results through ICT" (Fig. 7.1). The aim of introduction of this course is the acquaintance of Master students with all the specialties of modern information technologies used for preparing, protection, discussion and publication of Master studies.

Mastering of the 2nd level of technological standard "professional user" includes *knowledge of*:

- legal aspects of copyright, particularly when working with Internet resources, protection of intellectual property rights on the domestic and international level;
- principles of organization and operation of computer networks, systems and WWW of Web 2.0;
- composition, structure and principles of the search systems used in the global Internet, the main methods of data search and evaluation of conventional and advanced search in the Internet;
- major agrarian resources, including resources of FAO of UN (electronic and depository libraries, AgroWEB, AGORA, ESCORENA, AGRO VOC and other Internet resources);
- principles using geographic information systems and related software, and automated control systems that use modern IT technology workflow / BRM;
- digital content, CMS-systems, the basic format and appointment-ing, including media, formats, office documents, databases and spreadsheets;

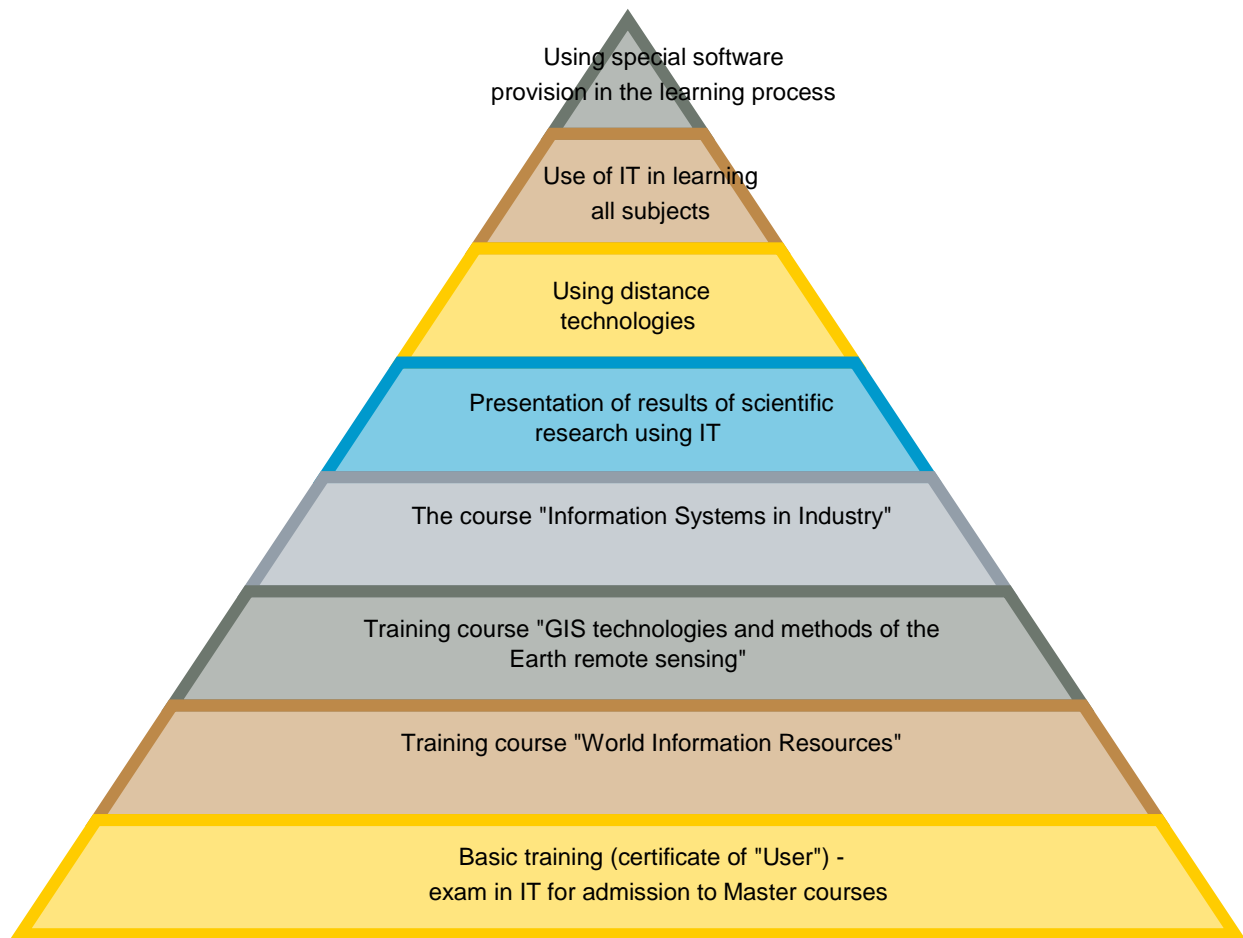


Fig. 7.1. *Ways of formation of Masters' computer competence*

- principles of submission of research results through publications, presentations, web-site;
- Principles of organization of communities, social services, Internet - blogs, Wiki, geocaching;
- and skills:*
- use of general purpose software (word processing, graphics editor, spreadsheet, database, presentation, training, Internet services) for work related to their profession, according to their needs and requirements of the specialty;
- maintain effective information search, in particular, scientific and professional direction, using traditional and electronic sources, including Internet resources, and assess found Internet resources;
- to publish research results in a Web-compatible form-mats, in particular through the CMS-systems (content ment system);
- submit results of independent work in the form of multimedia materials and presentations using the data collected and processed in electronic form;

- use the communications capabilities of ITs (e-mail, discussion forums, blogs, wikis) to enrich their own work with new methods and tools, as well as to maintain professional contacts;
- use computers and IT in planning and expanding their professional capabilities in training and in various forms of enhancement-governmental training (full-time, distance);
- understand and apply the basic applications and achievements of science and IT in their future profession;
- use IT to access the databases from the professional field, as well as collection, processing and presentation of information through databases;
- present results of research activity, based on effective use of IT, at scientific conferences and seminars;
- organize one's research, choose the best methods of researches and ways and means of the results presentation.

Master students are extensively involved in research and innovative work in addressing the challenges of the international projects, "Information provision of agriculture," which is implemented with the support of FAO of the United Nations University project on DePaul (USA) for Masters in information and communication technologies.

In preparing the Master's papers, students have the opportunity to use the agricultural Internet portal of Ukraine (AgroUA.net) - "The agricultural sector of Ukraine", which is the basis of a nationwide distance information and advisory systems in the fields of agriculture and in agricultural science and education, agricultural encyclopedia "EcoAgroVikipedia" created by the university scientists.

7.7. Cultural-Educational Activity at NUBiP of Ukraine

Cultural and educational work in the Basic Institution of NUBiP of Ukraine and its separate subdivisions is organized by the University administration, teaching and research center of cultural, educational and social work, students' and trade union organizations, departments of cultural studies, physical education and humanities, the department of educational work and student affairs, scientific and educational specialists, teachers, mentors academic groups, educators of dormitories (Fig.7.2).

The educational process is based on the principles of pedagogics of cooperation and provides self-expression and self-realization of creative potential of a young person.

Every year NUBiP of Ukraine conducts more than 70 different cultural events. Such of them as the Day of Knowledge, International Festival of amateur "Holosiivska Spring" contest "Beauty of NUBiP of Ukraine," International Student's Day, Day of Agricultural Worker, International Women's Day, Shevchenko's days, Mother's Day, the Day of Victory in World War II, an exhibition of applied art "Gospodarochka" theater performances, Sports Glory Day, Young Professionals Release Day take place with the active participation of 13 regional subdivisions of NUBiP of Ukraine.

Cultural work is performed by the Department of Culture.

Students can develop their creative abilities in the following groups: The Folk Ensemble of Song and Dance "Kolos", participants of which are over 200 students (the Head is Honored Worker of Culture of Ukraine S. Semenovska), National Brass Band (the Head is Honored Art Worker of Ukraine Y. Donenko), vocal-instrumental ensemble "Ottawa" (the Head is Honored Artist of Ukraine R. Rudyi), academic studio singing (the Head is Honored Artist of Ukraine N. Shelepnytska), National Theatre "Berezil" (the director is N. Titenko), Academic choir (leader is L. Shkvarun), vocal ensemble "Octave" and pop music studio (the Head is N. Melikov), ensemble dance "Charivnist" (the Head is S. Makoda), choreographic ensemble "Divoche suziry" (the head is A. Saurina).

The outstanding athletes have brought the fame to the University: Olympic champion in volleyball B. Tereshchuk (Mexico, 1968), Olympic champion in hammer throwing A. Bondarchuk (Munich, 1972), bronze medalist of the Olympic Games in Atlanta (1996), multiple European Champion, World Championship with a shot throwing O. Bahach, an Olympic weightlifter I. Razorionov (Athens, 2004), multiple champions and winners of world championships in powerlifting S. Bazayev and I. Nalyeykin, participant of the Olympic Games in Atlanta (1996) and Sydney (2000), winner of European Championships, World Student with saber V. Kalyuzhny, world champion among juniors in dumbbell lifting V. Bondarenko (2001), winner of World Cup in ski orienteering among Masters V. Parkhomenko (St. Petersburg, 1999), European champion in sumo A. Lived (2005), two-times world champion, European champion among Senior Karate S. Verbitsky (2007-2010).

University students - Masters of Sports of international class of Ukraine: multiple winners of the world championships, of Europe in sports radio direction finding, sports radio orienteering (2007-2011) Alexander Parkhomenko, Olena Pitirimova, Victoria Plokhenko, champion of the 1st European Sport Games in cherlideng Tetiana Pentsak (2007); Masters of Sports: European Cup winner in Belt Wrestling Dzhanbaz Delyaver (2007), European champion in cherlideng Olexandra Shulika (2010), champion and multiple championships' medalist in karate Verbytska Mariana Verbytska (2007-2010), World Championship of taekwon-do ITF Alice Tugai 11),

multiple winners of world and Europe championship in dumbbell lifting Konstantin and Dmytro Chernenko (2007-2011).

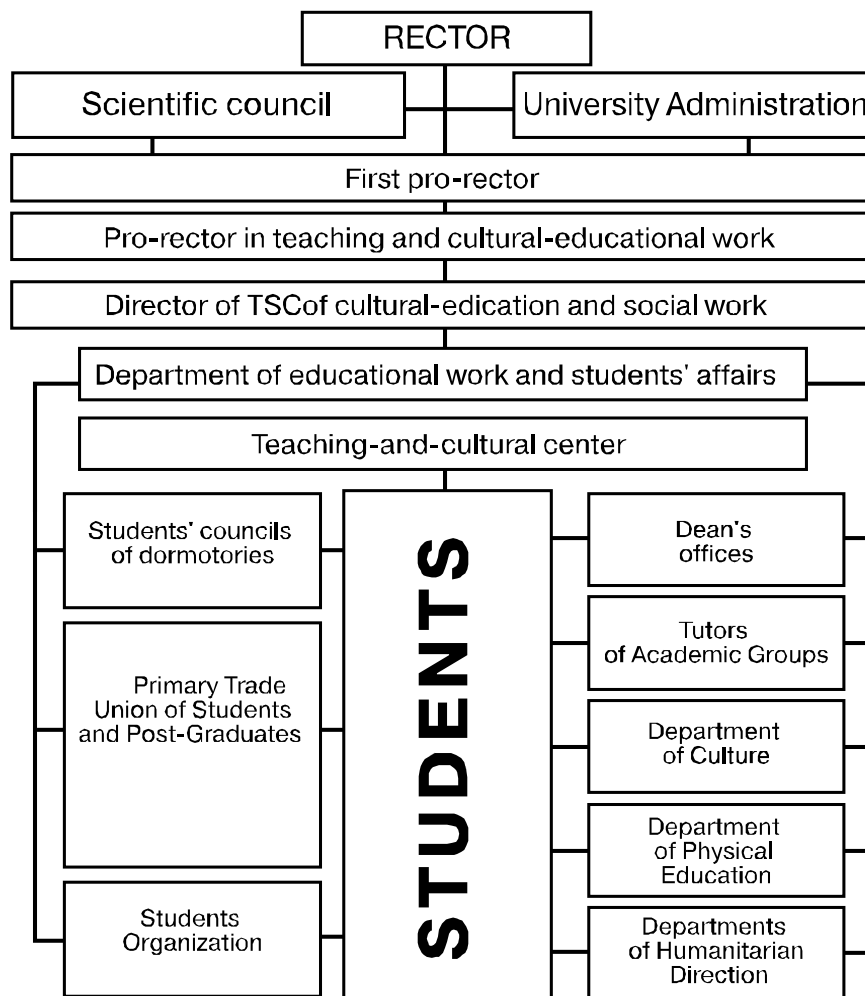


Fig. 7.2 Organizational model of education work at Basic Institution (Kyiv) of NUBiP of Ukraine