NATHIONAL UNIVERSITY OF LIFE
AND ENVIRONMENTAL SCIENCES OF UKRAINE

BACHALOR CURRICULA
AND
TRAINING PROGRAMS

2013

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1.1. Historical brief

The history of the National University of Life and Environmental Sciences of Ukraine originated from Agricultural department and Veterinary faculty of Kyiv Polytechnic Institute, Department of Forestry of Agricultural Institute in Marimont (Poland).

The agricultural department of Kyiv Polytechnic institute (opened in August 31, 1898) was transformed into Agricultural (Agronomic) faculty in 1918, and later in 1922 into Kyiv Agricultural Institute, which became an independent higher educational institution in 1923.

The first dean of the agricultural department was M.P. Chyrvynskyi, Master of Agriculture, State Councilor, Honorary Professor and Head of zoo breeding technologies department. His achievements contributed to the national science treasury. In 1905 the scientist was elected the first director of the institute after regaining the university autonomy.

The honorary fellow and lecturer at the agricultural department was K.A. Timiriaziev, professor emeritus of the Imperial Moscow University.

The first 32 scientists-agronomists graduated in 1903. D.I. Mendeleyev, a famous scientist and chemist, an honorary fellow of the popular Kiev society of naturalist was the Head of the State Examination Board and highly appreciated the graduates' knowledge.

The first educational buildings in Golosiievo was designed in 1926-1929 by the architect D.M. Diachenko in the Ukrainian Baroque style (educational buildings 1, 2, 4). The dendrological garden was founded in 1923.

In 1926, Kyiv Agricultural Institute was the leading institution of agricultural science and agronomic education in the central part of Ukraine. The People's Commissariat of Education, as official documents certify, planned to transform KAI into the higher agricultural school of USSR - Ukrainian Agricultural Academy. Subjective reasons and collectivization prevented the realization of this project.

According to the resolution of the Board of People's Commissars of USSR from 1930 "On the reorganization of schools and bringing them under the jurisdiction of the respective Commissariats", a number of independent institutions operated on the bases of KAI in the first half of the 1930s. However, from the mid 1930s the institution regained its name and structure.

During World War II KAI was evacuated to Alma-Ata and functioned in the Kazakh Agricultural Institute.

In 1948 on the occasion of its 50th anniversary, the institute was rewarded with the Order of the Red Banner for outstanding achievements in teaching and research work.

Kyiv Forestry Institute began its history from the Institute of Agriculture in Marimont (Poland, 1840), which affiliated with Warsaw forest school and later was reorganized into the Institute of Agriculture and Forestry. In 1862 it was transferred to Novo-Alexandriya (now - Pulawy, Poland). In 1930 the Forestry Faculty of Kharkiv Agricultural Institute was moved to Kyiv and affiliated with wood engineering faculty of Kyiv Agricultural Institute to become the Ukrainian Institute of Forestry, and the same year it was reorganized into Kyiv Forestry Institute.

In 1954 Kyiv Agricultural Institute and Kyiv Forestry Institute merged into one institution, called the "Ukrainian Agricultural Academy of the Order of the Red Banner" (UAA).

In 1954 Agriculture Kyiv and Kyiv Forestry Institute were merged into one institution, called the "Order of the Red Banner of Ukrainian Agricultural Academy" (UAA).

In the 1950s UAA was not only the major staff training center for agriculture in Ukraine, but also the center of its scientific support. From 1956 to 1962 the Ukrainian Agricultural Academy was a part of the Ukrainian Academy of Sciences (UAS) as its educational department. It should be noted that this period in the history of the institution

was one of the most productive, because there was a real possibility of integration of education and research activities, which brought it the fame of the best university of the former USSR. This was the prototype of large education and research universities functioning in highly developed countries of the world.

By the willful decision of the government, despite the consistent upholding of the strategy of agricultural development by the Presidium of the Ukrainian AAS which did not coincide with the official opinion, the Ukrainian Academy of Agricultural Sciences was liquidated, and research institutes were reassigned to the All-Union Academy of Agricultural Sciences named after Lenin and Ministry of Agriculture of USSR.

In 1957 Kyiv Veterinary Institute was joined to UAS, the Institute began its work as a veterinary faculty of Kiev Polytechnic Institute (1920), and since 1921 it functioned as an independent Kyiv veterinary and zoo technological Institute. Kyiv veterinary institute has functioned since 1930.

The 1960-80s were the period of developing international relations. During this time over two thousand foreigners from more than 100 countries of Asia, Europe, Africa, Indochina, South America graduated from the academy. The administration of the UAA on behalf of the union leadership, with the direct participation of academy teaching staff and other universities, organized the Institute of Agriculture in Cambodia (1985).

The university developed its research activities, founded world famous schools led by famous scientists. The teaching staff significantly improved forms and methods of training specialists for agriculture and carried out research on current economic problems in the agricultural sector of Ukraine.

In 1982 the Ukrainian Agricultural Academy established Vinnytsia affiliate branch, which in 1991 became an independent institute (now - Vinnytsia State Agrarian University).

In 1989, the Academy won the socialist competition among 108 agricultural universities of the USSR and was awarded the challenger Red Flag of the Central Committee of the CPSU and the Council of Ministers of the USSR and the All Union Komsomol Central Committee.

From 1962 to 1992 the educational institution was functioning as an autonomous Ukrainian Agricultural Academy, subordinated to the Ministry of Agriculture of the USSR, and later - the USSR.

Acquiring the experience of highly developed countries in the field of higher education, active collaboration with leading agricultural educational institutions, participation in the reform of higher education in Ukraine in the framework of the Bologna process have led to the qualitative changes in the structure and functioning of the institution, resulting in the change of its status and title.

In August 1992 the Ukrainian Agricultural Academy was formed into the Ukrainian State Agrarian University and got national status according to the resolution of the Verkhovna Rada of Ukraine No. 158 from July 29, 1994. Since that time it existed as the National Agrarian University and according to the above resolution of the Verkhovna Rada of Ukraine and the resolution of the Cabinet of Ministers of Ukraine No. 387 from June 1, 1995 has been subordinated to Cabinet of Ministers of Ukraine.

The structure of the university included a lot of education and research institutions and production subdivisions as entities that later were reorganized into separated subdivisions.

Since 1936 the University has incorporated Boyarka Forest Research Station, since 1957 – training and research farm "Vorzel", since 1966 - Agronomic Research Station (Kyiv region), since 1972 - Velykosnitynka training and research farm named after O.V. Muzychenko.

In 1996, according to the resolution of the Cabinet of Ministers of Ukraine from April 23, 1996 № 448, Nizhyn Agricultural College (Chernihiv region) joined National Agraricultural University.

According to the Resolution of the Cabinet of Ministers of Ukraine from 29 May, 1997 № 526, Berezhany Agricultural College (Ternopil region), Zalishchyky (Ternopil region) and Boyarka (Kiev region) agricultural colleges, Nemishaivo agricultural college and Irpin Economic College (Kiev region) joined the NAU.

Eventually Irpin, Nemishayevo, Zalishchyky and Boyarka Technical Schools were given the status of colleges according to the results of accreditation.

According to the Resolutions of the Cabinet of Ministers of Ukraine from 6 May 2001 No 434 and from May 16, 2001 No 508, Berezhany and Nizhyn agrotechnical institutes were organized.

According to the order of Cabinet of Ministers of Ukraine from August 8, 2001 № 327 of the Ministry of Agrarian Policy of Ukraine the Institute of post-diploma education of managers and specialists of AIC was transferred to the National Agrarian University.

According to the resolution of the Cabinet of Ministers of Ukraine from 11 July 2001 № 278 the faculty of military training was organized at the military department.

Acknowledging the significant achievements of NAU in reforming its activities, by the order of the President of Ukraine from 14 December 2000 № 1338 "Issues of National Agricultural University" and according to Resolution of the Cabinet of Ministers of Ukraine from March 1, 2001 № 202 "On National Agricultural University" the University confirmed the status of national, autonomous and self-governing institution of higher education in Ukraine. These resolutions provide funding of the university's activities by a separate article in the State Budget by individual standards.

On behalf of the President of Ukraine from August 1, 2003 (№ 1-1/932), the resolution of the Cabinet of Ministers of Ukraine from October 2, 2003 № 584 "On organization of Ukrainian laboratory of quality and safety of AIC products" the Ukrainian laboratory of quality and safety of AIC products was organized as a research and production structural subdivision in the National Agrarian University.

According to the resolution of the Cabinet of Ministers of Ukraine from March 31, 2004 № 201-r the property complex of state poultry breeding plant named after Frunze (Crimea) was transferred to NAU as training and research farm.

According to the resolution of the Cabinet of Ministers of Ukraine from July 26, 2004 № 517-p agreed by the Council of Ministers of the Autonomous Republic of Crimea, the Southern Filial «Crimean Agrotechnological University" NAU (Simferopol) was organized on the basis of the Crimean State Agrotechnological University.

On September 1, 2004 the Crimean Agroindustrial College, Bakhchisaray Construction College; Prybrezhne Agricultural College, College of hydro melioration and mechanization of agriculture joined the National Agrarian University.

According to the resolution of the Cabinet of Ministers of Ukraine from September 8, 2004 № 633-p "On reorganization of the Ukrainian Research Institute of Agricultural Radiology" the above institution joined the National Agrarian University.

According to the resolution of the Cabinet of Ministers of Ukraine from December 7, 2005 № 497-p "On reorganization of Bobrovytsia State Agricultural and Economic College" joined the National Agrarian University. Later, according to the Rector's order from March 3, 2007 the college was renamed as a separated structural subdivision of NAU (now NULESU) "Bobrovytsia College of Economics and Management named after O. Mainova".

According to the resolution of the Cabinet of Ministers of Ukraine from February 14, 2007 № 47 "On reorganization of Mukacheve State Agricultural College" Mukacheve State Agricultural College joined the National Agrarian University (now separated structural subdivision of NULESU "Mukacheve Agricultural College ").

The university includes educational information and counseling centers (EICC): Tarashcha (founded in 2002 on the basis of Tarashcha Agrotechnical College); Lubny (founded in 2002 on the basis of Lubny Forestry College); Malyn (founded in 2007 on the basis of Malyn Forestry College), Mukacheve (founded in 2007 on the basis of Mukacheve Agricultural College); Bobrovytsia (founded in 2008 on the basis of Bobrovytsia College of Economics and Management named after O. Mainova).

In the field of international cooperation the university signed memoranda on mutual recognition of education systems between the National University of Life and Environmental Sciences of Ukraine and universities in the United States: Iowa (from 06.05.1996 and from 12.06.1998), Louisiana (from 31.08.1998; in March 2009 memorandum was prolonged), Depaul (Chicago, from 01.09.2005), Ghent University (Belgium, from 26.09.2002); German universities: Humboldt University in Berlin (from 27.09.2002), Weihenstephan University of Applied Sciences (from 14.04.2005), Anhalt University of Applied Sciences (from 30.10.2006), Wageningen University (Netherlands, from 19.10.2006)

To expand the educational, research and innovation activities of the National Agrarian University and to satisfy the needs of agricultural, environmental and other industries, as well as to adapt these activities to the requirements of international organizations of research universities, National Agrarian University was renamed into the National University of Life and Environmental Sciences of Ukraine (NULES of Ukraine) by the Resolution of the Cabinet of Ministers of Ukraine № 945 from October 30, 2008, and in 2010 it received the status of self-governing (autonomous) research national university.

1.2. The concept and objectives of educational activities

The concept of the educational activities of the National University of Life and Environmental Sciences of Ukraine is determined by the **status of a research university** that conducts educational, research, scientific, innovation, production and consultancy activities aimed to develop modern approaches to problems of life and environmental sciences, the use, reproduction and sustainable development of biological resources in soil and aquatic ecosystems, the introduction of new environmental agro-biotechnology, technologies of soil safety and fertility, energy saving agricultural technologies, environmental and legal management in rural areas, monitoring and enforcement of standards, quality and safety of agricultural products, processing technologies and the environment.

The University aims to meet the educational needs of individuals, society and the state in accordance with the **Constitution of Ukraine, Laws of Ukraine "On Education", "On Higher Education", "Regulations on the organization of the academic process in higher education."**

NULESU conducts its research activities in accordance with the European scientific and educational requirements and standards, participates in research programs and projects, including international cooperation with leading foreign universities and partners.

Educational activities at the university are secular in nature, independent from political, civic and religious interference. The main objective of the university is to integrate into the global educational system and achieve the international status.

NULESU is accredited as a higher educational institution of the IV level and enjoys the right to train specialists in the following educational levels:

- Junior specialists in 33 specialties;
- Bachelors in 29 fields of study;
- Specialists in 27 specialties and 50 specializations;
- Masters in 44 specialties and in more than 180 master programs.

The basic institution of the University (Kyiv) implements the degree system of training "bachelor-master". In addition, the university offers training for candidates and doctors in 78 and 64 specialties respectively, as well as retraining and advanced training of specialists for the agricultural sector.

Over 40,000 students study at 20 faculties of the basic institution of the University (Kyiv), Southern Filial «Crimean Agrotechnological University" (Simferopol) and 12 regional higher educational institutions of NULESU I – III levels of accreditation.

The concept of the university educational activities is based on the following principles:

• access to higher education for individuals who meet the requirements of professional selection (competition) considering the existing benefits for rural youth and those living in the areas contaminated by the Chernobyl disaster;

• equality of conditions for any student, learner, postgraduate, doctoral candidate in order to realize their abilities, talent, personality;

• transparency of higher education, creation of preconditions for selecting the form and specialty of education;

• the priority of universal spiritual values, humanism and democracy in the academic process;

• logical unity and continuity of the academic process and its integration with science and production;

• correspondence of educational level to international requirements;

• open competition and contracts for vacancy positions of heads of departments, deans, professors, associate professors and other employees.

The main objectives of the educational activities at the university are:

• Organization of the academic process through innovative master and postgraduate programs, advanced research and professional training of masters, PhDs (Doctors of Philosophy) and doctors for scientific and pedagogical activities at universities, research institutions and high-tech science-intensive industries;

• Introduction of Master's and PhD programs, teaching and research staff of the University on the basis of their research activities through close integration of research with the academic process and providing in-depth fundamental component in teaching and research;

• strengthening and effective use of human scientific, educational and research potential of the University through effective, world-class, research and training process;

• development and implementation of new integrated technologies, methodologies, technical training into the training process;

• integration of education with science and industry in the framework of the educational, scientific and production associations (including interdisciplinary), basic departments, their subdivisions in the institutions of NAS and NAAS of Ukraine and other academic institutions for teaching and research;

• training of personnel for innovative development of Ukraine on the basis of creativity, competence in modern information technology, methods of development, use and protection of intellectual property, basics of innovation management, marketing, product innovation, commercialization of scientific and technological developments;

• ensuring a high level of employment of graduates, young scientists with deep scientific, research and technical training, developers of new techniques and technologies, managers of scientific and technological business and public administration in education, science and technology;

• involving students into research, development and implementation of complex scientific and technical knowledge intensive systems as a component of the academic process;

• ensuring high requirements for competitive selection of the teaching staff taking into account their scientific achievements;

• development of a virtual educational and scientific information environment by involving all academic and research units of the University;

• training of managers and professionals of organizations, enterprises and institutions who obtain and implement the results of research and technological achievements of the University;

• promoting the spiritual and cultural development of society, shaping the country's knowledge base, developing high-tech industries and innovative business environment.

The academic process at the University is based on a systems approach to foster students' broadmindedness, original thinking, abilities to solve industrial and socio-economic problems.

The educational process is an integral part of academic activities and provides education of future professionals in the best traditions of national and world culture based on common priorities, renewal and development of the national economy, culture, science and spiritual unity of the nation and the peoples of Ukraine.

One of the key areas of strategic objectives of the University is creation of a new mechanism of interaction of all participants in the academic and educational process, based on respect for the principle of the unity of their interests, educational opportunities and personality needs.

The main objectives of the methodological activity in the context of degree education system are:

• development of a professional of XXI century model and the requirements to the level of professional knowledge, capacity for self-learning, flexibility in market conditions and self-development;

• involvement of the University staff into the scientific-methodological commission of the Ministry of Education and Science of Ukraine and the Ministry of Agrarian Policy and Food of Ukraine engaged in improvement of organizational and methodological support of academic process, developing branch standards for higher education;

• creation of scientific-methodological complex, fields of training (specialties) and discipline teaching methods based on advanced educational technologies and related educational and laboratory facilities;

• compliance with state standards of higher education;

• adaptation of scientific and technical literature, written by the University staff, to the requirements of international standards of WTO and the European Union;

• determining the content and forms of educational activity for various stages of training and certification;

• identifying the content and character of graduates employment in order to make amendments and additions to the content of curricula and the organization of the educational process;

• development of guidelines and forms of rating system, assessment criteria, tests to determine the level of professional knowledge and skills;

• development of new information and communication systems to support the academic process.

1.3. Fields of Study in Bachelor Programs

The National University of Life and Environmental Sciences of Ukraine trains bachelors in the following fields of study:

agronomy, plant protection, biotechnology, ecology, environmental protection and sustainable development, technologies of livestock production and processing, food technologies and engineering, water bioresources and aquaculture, veterinary medicine, geodesy, cartography and land management, law, social pedagogy, philology (translation), forestry, park and gardening, wood processing technologies, processes, machinery and equipment of agroindustrial production, transport technologies (according to the type of vehicles), mechanical engineering, construction, energetics and electrotechnical systems in agroindustrial complex, electrical engineering and electrical technologies, automation and computer-integrated technologies, computer sciences, economics of enterprise, accounting and auditing, finance and credit, economic cybernetics, marketing, management, merchandizing and commercial business.

Bachelor's degree is an education and qualification level (EQL) in higher education which can be obtained by a person who completed secondary education and received basic and special skills and knowledge about generalized object of work (activity), sufficient for doing tasks and responsibilities (work) of a certain level of professional activity that are provided for primary positions in a certain kind of economic activity.

Bachelor training can be provided on the basis of educational qualification level of junior specialist.

Educational and professional training bachelor program offers higher education in the field of study and the appropriate qualifications.

The contents of training - science-based methodological and didactic teaching material, which provides education and training according to educational and qualification level.

The contents consists of:

- the regulatory part - obligatory content of education, formed according to the requirements of educational and skill characteristics as thematic modules, indicating their amount and level of acquisition, as well as forms of state certification;
- the elective part - recommended content of education, formed as thematic modules, indicating their amount and level of acquisition, as well as forms of state certification, aimed to meet the needs and capabilities of an individual, regional needs for specialists in particular specialization.

Individuals who successfully passed state certification, obtain standard documents about obtaining basic higher education in the relevant field of study and degree qualifications.

Bachelors are trained at the faculties of the basic institutions of the University (Kyiv) and the Southern Filial NULESU «Crimean Agrotecnological University" ("CATU"), in separated subdivisions of NULESU - 12 universities of I-III levels of accreditation and 5 educational information and consultancy centers (EICC) (Table 1.1). Training in all units is realized on agreed curricula and programs, involving teaching staff of the basic institution of the university to give lectures at separated subdivisions of NULESU. This allows to successfully implement a degree system, to create favorable conditions for capable students, to provide individualized training program and transition to higher level programs.

Table1.1. Fields of study in Bachelor degree programs

№	Field of study	Departments that provide Bachelor degree training and licensed amount of applicants (full-time/extra-mural)	
		Faculties of the basic institution	SF "CATU", SS of NULESU
1	2	3	4
1	6.010106 – Social Pedagogy	Faculty of Education (50/50)	–
2	6.020303 – Philology (Translation)	Faculty of Education (50/-)	–
3	6.030401 – Law	Faculty of Jurisprudence (75/115)	Mukacheve EICC (-/40)
4	6.030502 – Economic Cybernetics	Faculty of Computer sciences and economic cybernetics (50/30)	SF «CATU» (30/-)
5	6.030504 – Economics of Enterprise	Faculty of Economics (125/165)	SF «CATU» (40/40) Berezhany agrotechnical institute (40/200) Bobrovytsia EICC (-/50)
6	6.030507 – Marketing	Faculty of Agricultural Management (60/60)	–
7	6.030508 – Finance and Credit	Faculty of Economics (150/140)	SF «CATU» (45/30)
8	6.030509 – Accounting and Auditing	Faculty of Economics (150/215)	SF «CATU» (90/80) Berezhany agrotechnical institute (75/100) Nizhyn agrotechnical institute (40/25) Irpin economic college (200/200) Zalishchyky agrarian college named after Ye. Khraplyvyi (50/50) Crimean agroindustrial college (25/25) Mukacheve EICC (-/25) Bobrovytsia EICC (-/50)
9	6.030510 – Merchandising and Commercial Entrepreneurship	–	Irpin economic college (50/50)
10	6.030601 – Management	Faculty of Agricultural Management (200/250)	SF «CATU» (50/40) Nizhyn agrotechnical institute (30/25) Bobrovytsia EICC (-/50)
11	6.040106 – Ecology, environment protection and sustainable development	Faculty of Ecology and sustainable development (100/100)	SF «CATU» (-/30) Berezhany agrotechnical institute (50/50)
12	6.050101 – Computer sciences	Faculty of Computer sciences and economic cybernetics (50/50)	–
13	6.050202 – Automation and computer integrated technologies	Faculty of Energetics and Automation (50/50)	–
14	6.050503 – Mechanical engineering	Faculty of Engineering and design of Machinery and systems of Environmental Sciences (170/120)	–
15	6.050701 – Electrical Engineering and Electrotechnologies	Faculty of Energetics and Automation (25/25)	–
16	6.051401 – Biotechnology	Faculty of Biotechnology (50/50)	–
17	6.051701 – Food technologies and engineering	Food technologies and AIC quality Management (100/100)	SF «CATU» (130/25)

1	2	3	4
18	6.051801 – Wood processing technologies	Faculty of Forestry (50/100)	Malyn EICC (-/50)
19	6.060101 − Construction	Faculty of Engineering and design of Machinery and systems of Environmental Sciences (50/-)	
20	6.070101 – Transport technologies (according to the type of vehicles)	Faculty of Agrobiosystem Engineering (100/100)	–
21	6.080101 – Geodesy, cartography and land management	Faculty of Land Management (90/85)	SF «CATU» (90/90)
22	6.090101 – Agronomy	Faculty of Agrobiology (300/345)	SF «CATU» (180/180) Zalishchyky agrarian college named after Ye. Khraplyvyi (50/50) Nemishayevo Agrotechnical College (60/-) Crimean Agroindustrial
			College (25/25) Mukacheve EICC (-/25) Bobrovytsia EICC (-/20)
23	6.090102 – Production technology and processing of livestock products	Faculty of production technology and processing of livestock products (125/125)	SF «CATU» (-/30)
24	6.090103 – Forestry, Park and Gardening господарство	Forestry, Park and Gardening Management and Landscape Architecture (335/350)	SF «CATU» (130/50) Berezhany agrotechnical institute (50/50) Lubny EICC (-/50) Malyn EICC (-/50)
25	6.090105 – Plant Protection	Faculty of Plant Protection (100/75)	Crimean Agroindustrial College (25/-)
26	6.090201 – Water bioresources and aquaculture	Faculty of Fishery (75/75)	–
27	6.100101 – Energetics and electrotechnical systems in AIC	Faculty of Energetics and Automation (170/220)	SF «CATU» (-/30) Berezhany agrotechnical institute (75/100) Nizhyn agrotechnical institute (75/75) Nemishayevo Agrotechnical College (60/50) Tarashcha EICC (-/50)
28	6.100102 – Processes, machinery and equipment of agroindustrial production	Faculty of Agrobiosystem Engineering (200/250)	SF «CATU» (95/95) Berezhany agrotechnical institute (75/100) Nizhyn agrotechnical institute (75/75) Nemishayevo Agrotechnical College (60/50) Tarashcha EICC (-/50)
29	6.110101 – Veterinary medicine	Faculty of Veterinary Medicine (250/25)	SF «CATU» (100/-)

While doing bachelor's degree students have an opportunity to choose a future master program within the fields of study (Table 1.2). Master degree training is provided at the basic institution of the University (Kyiv) which has 12 education and research institutions (ERI) including research institutes, education and research centers, departments, and at SF of NULESU "CATU" (Simferopol).

Table 1.2. Master Degree Specialties which can be chosen by bachelors

№	Bachelor Field of Study	Master Program Specialty	Departments that provide master degree training and licensed amount of applicants (full-time /extra-mural)	
			ERI of the basic institution	SF of NULESU "CATU"
1	*2*	*3*	*4*	*5*
1	Social pedagogy	Social pedagogy	Natural Sciences and the Humanities (50/50)	–
2	Law	Law	Land Management and Jurisprudence (15/-)	–
3	Economic cybernetics	Economic cybernetics	Ukrainian ERI of information and telecommunication support of agroindustrial and environment protection branches of economy (50/50)	–
4	Economics of enterprise	Economics of enterprise	Business (75/75)	SF «CATU» (30/30)
5	Marketing	Marketing	Business (60/60)	–
6	Finance and Credit	Finance and Credit	Business (150/150)	–
7	Accounting and auditing	Accounting and auditing	Business (150/150)	SF «CATU» (10/10)
8	Management	Management of Organizations and Administration	Business (100/100)	SF «CATU» (15/10)
		International Economic Activity Management	Business (150/150)	–
		Taxation	Business (50/50)	–
9	Ecology, Environment Protection and Sustainable Development	Ecology and Environment Protection	Plant Science, Environment and Biotechnologies (50/50)	–
10	Computer Sciences	Information Management Systems and technologies	Ukrainian ERI of information and telecommunication support of agroindustrial and environment protection branches of economy (25/-)	–
11	Automation and Computer-integrated Technologies	Automated Control of Technological Processes	Energetics and Automation (35/35)	–
12	Mechanical Engineering	Machinery and Equipment of Agricultural Production	Technical (50/20)	–
		Forestry Complex Equipment	Technical (50/50)	–
13	Electrical Engineering and Electrotechnologies	Electrotechnical systems of Power Consumption	Energetics and Automation (20/20)	–
14	Biotechnology	Environmental biotechnology and bioenergetics	Plant Science, Environment and Biotechnologies (30/30)	–
15	Wood processing technologies	Technology of wood processing	Forestry, Park and Gardening Management (50/50)	–
16	Processes, Machinery and Equipment of Agroindustrial Production	Mechanization of Agriculture	Technical (165/165)	SF «CATU» (65/65)

1	2	3	4	5
17	Transport Technologies	Organization of Transportation and Management in Transport (automobile transport)	Technical (15/15)	–
		Traffic Organization and Control	Technical (15/15)	–
18	Food technologies and engineering	Technology of Preservation, Conservation and Processing of Meat	Bioresources Quality and Life Safety (30/30)	–
		Technology of Preservation and Processing of Water Bioresources	Bioresources Quality and Life Safety (30/30)	–
		Technology of fermentation and viniculture products	–	SF «CATU» (15/10)
		Technologies of fats and fat substitutes	–	SF «CATU» (10/-)
19	Geodesy, Cartography and Land Management	Land Management and Cadastre	Land Resources and Jurisprudence (90/85)	SF «CATU» (20/20)
20	Agronomy	Agronomy	Plant Science, Environment and Biotechnologies (100/100)	SF «CATU» (40/40)
		Agrochemistry and Soil Science	Plant Science, Environment and Biotechnologies (50/50)	–
		Fruit and Vegetable Science and Viniculture	Plant Science, Environment and Biotechnologies (50/50)	SF «CATU» (50/30)
		Selection and Genetics of Agricultural Crops	Plant Science, Environment and Biotechnologies (25/25)	–
21	Technology of Production and Processing of Livestock Products	Technology of Production and Processing of Livestock Products	Livestock Science and Water Bioresources (125/125)	–
22	Forestry and Park and Gardening Management	Forestry	Forestry and Park and Gardening Management (100/75)	–
		Park and Gardening Management	Forestry and Park and Gardening Management (75/75)	–
23	Plant Protection	Plant Protection	Plant Science, Environment and Biotechnologies (75/75)	–
24	Water Bioresources and Aquaculture	Water Bioresources	Livestock Science and Water Bioresources (75/75)	–
25	Energetics and Electrotechnical Systems in Agroindustrial Complex	Energetics of Agricultural Production	Energetics and Automation (100/100)	–
		Electrification and Automation of Agriculture	Energetics and Automation (50/50)	–
26	Veterinary Medicine	Veterinary Medicine	Veterinary Medicine, Quality and Safety of Livestock Products (250/25)	SF «CATU» (70/–)

Graduates of NULESU can apply for Master degree program at the basic institution of the University in specialty "Specific categories":

«Quality, standardization and certification"8.18010010

«Administrative Management"8.18010018

8.18010020 - "Management of Educational Institution"

« Pedagogy of Higher School"8.18010021

1.4. Admission

Admission to the National University of Life and Environmental Sciences of Ukraine is carried out in accordance with the rules of admission to training programs EQL "Junior Specialist", "Bachelor", "Specialist" and "Master" for the current year, which are agreed with the Ministry of Education and Science of Ukraine and approved by the Rector of the University.

Admission for 2013 is worked out by the Admission committees of the basic institution of the University (Kyiv), Southern Filial of NULESU «Crimean Agrotechnological University" and separated subdivisions of NULESU - regional universities of I-III levels of accredition in accordance with the admission rules to higher educational institutions of Ukraine, approved by the Ministry of Education and Science, Youth and Sports of Ukraine from 05.11.2012, № 1244.

Table 1.3. Dates for application, competitive assessment of certificates, entrance exams, competitive selection and enrollment

Form of study	Dates of Application	Entrance exams	Rating list	Enrollment
full-time	02.07 - 31.07.2012	21.07 - 31.07.2012	01.08.2012 05.08.2012 08.08.2012.	by state order to 11.08.2012, by contract to 25.08.2012
Extra-mural and externship	19.07 - 17.08.2012	15.08 - 17.08.2012	18.08.2012 22.08.2012 25.08.2012	by state order to 28.08.2012, by contract to 31.08.2012

Applicants personally apply the following documents to the Admission committee of NULESU:

- an application form, which includes the program and the form of training ;
- a certificate of complete secondary education (or a document of education and qualification level obtained) and its appendix, original or certified copies at the applicant's choice;
- a medical certificate (form 086-O (original or certified copy);
- 6 colour photos 3x4 cm;
- certificates of the Ukrainian Center for Educational Quality Assessment (or a certified copy) issued in 2008-2013 with marks in subjects determined by the admission rules for selection procedure to enter the chosen field of study at NULESU;
- a copy of the identification number (3 copies);
- a copy of passport (1st, 2nd pages and permanent address 3 copies).

All copies of documents are certified at NULESU or according to established regulations.

A Ukrainian passport, a foreign passport of a Ukrainian citizen or the other document identifying a person and citizenship (birth certificate for persons who do not have passports yet), military ID (certificate of detachment to the recruiting station), document of education and appendix; certificate(s) of Ukrainian Center for Educational Quality Assessment, a medical certificate (form 086-O) and documents certifying their right to apply for, are submitted by an applicant in person.

Applicants for training by state order under target conditions in accordance with the established quotas, submit a referral issued by the relevant authorities of the Autonomous Republic of Crimea, regional, Kyiv and Sevastopol city state administrations and ministries or other central executive bodies.

Applicants with completed secondary education may submit applications for no more than 3 bachelor's programs.

Documents that entitle the right to be enrolled according to the results of entrance examinations at NULESU, target admission, hors concours, the interview conclusion that testify the achievements in core subjects providing the priority enrollment for applicants who have the same competitive score, are submitted by an applicant in person within the dates of application submission.

The list of competitive disciplines in the certificates of the Ukrainian Center

for Educational Quality Assessment (entrance examination) is given in Table 1.4.

Competitive score of an applicant who has a certificate of complete secondary education is calculated by adding the grades of certificate of competitive disciplines (entrance examination), average grades of the certificate (appendix to a document) of complete secondary education and extra grades required by the rules of admission at NULESU.

Minimum score number of competitive disciplines in the certificate of the Ukrainian Center for Educational Quality Assessment that allows participation in the competition is: in major disciplines - not less than 140 grades, in non-major disciplines - not less than 124 grades.

By the decision of the admission commission applicants are allowed to participate in the competitive selection having submitted a certificate of the Ukrainian Center for Educational Quality Assessment with scores in one of the non-major comprehensive disciplines below 124 grades, if he/she has no less than 170 grades in major disciplines.

Categories of persons with disabilities (disabled people of 1st and 2nd groups, disabled children), persons who obtained complete secondary education in 2007 and earlier and citizens of Ukraine who obtained complete secondary education abroad in the year of entry, may choose to participate in the competition for admission – according to the result of external independent assessment or the results of the competitive entrance examinations at NULESU.

The right to participate in the competition according to the result of the competitive entrance examination unless the applicants participated in external independent assessment is given to:

- Citizens of Ukraine exempt from military service in the year of entry into NULESU;
- Military servicemen (privates, sergeants and master sergeants) that serve by the military contract – when applying for extra-mural programs.

Applicants for training in educational and professional Bachelor program (Master in "Veterinary Medicine") on the basis of obtained EQL of junior specialist, are enrolled on the first course (short-term program) or on senior courses (program with the regulatory period of training) providing they apply for related field of study. The competitive selection of this category of applicants is carried out according to the number of grades received at the major entrance tests at NULESU. Applicants-graduates from higher educational institutions of I-III levels of accreditation who received no less than 124 grades in major exams are allowed to participate in the competition in all fields of training.

Individuals who participate in the competition for admission to several universities or in several fields of study or training in various forms at NULESU, within the dates of admission to NULESU, after obtaining recommendation for admission should meet the requirements for enrollment by state order: to submit original document about education (qualification) level and appendix thereto, medical and other certificates to the Admissions Commission of NULESU.

Table 1.4. List of contest subjects in the certificates of the Ukrainian Center of education quality assessment (entrance examinations)

Field of Study	List of contest subjects (entrance examinations)		
	1	2 (special)	3
Automation and computer-integrated technologies; Energetics and electrotechnical systems in AIC; Computer sciences; Processes, machinery and equipment of AIC production; Transport technology	Ukrainian Language and Literature	mathematics	Physics or foreign language
Construction; Wood processing technologies; Electric engineering and electrotechnologies; Mechanical engineering			Physics or chemistry
Geodesy, cartography and land management; Economics of enterprise; Economic cybernetics; Marketing; Accounting and auditing; Finance and credit			History of Ukraine or Geography
Ecology, environment protection and sustainable use of Natural Resources			Chemistry or Geography
Forestry, Park and Gardening			Biology or foreign language
Management			Geography or foreign language
Food technologies and Engineering			Chemistry or foreign language
Agronomy. Plant protection		Biology	Chemistry or mathematics
Veterinary Medicine			Chemistry or фізика
Water bioresources and aquaculture			Mathematics or Geography
Production technology and processing of livestock products			Mathematics or фізика
Law science		History of Ukraine	Foreign language or mathematics
Social pedagogy			Foreign language or World Literature
Biotechnology		Chemistry	Biology or mathematics
Philology (English-Ukrainian translation)		English	History of Ukraine or World Literature
Philology (German-Ukrainian translation)		German	History of Ukraine or World Literature

The competitive selection and enrollment of applicants to NULESU

Target admission to NULESU

Applicants on target admission according to the Resolution of the Cabinet of Ministers of Ukraine from 29.06.99, № 1159 "On training specialists for activities in rural areas", are enrolled through a separate competition in accordance with the number of grades received.

Individuals who are not enrolled on target admission places through a separate competition, may participate in the competition on a general basis.

Enrollment hors concours

Enrollment hors concours upon submission of the certificate of the Ukrainian Center for Educational Quality Assessment (upon obtaining the appropriate number of grades at the entrance examinations) with no less than the determined minimum number of grades and other documents testifying the right to be enrolled hors concours shall be entitled to:

- individuals who in accordance with the Law of Ukraine "On Status of War Veterans and Guarantees of their Social Security";
- orphans and children deprived of parental care, as well as those of them aged 18 to 23 according to the Resolution of the Cabinet of Ministers of Ukraine from 05.04.94 № 226 "On Improving education, training, social protection and financial support of orphans and children deprived of parental care "(with amendments);
- disabled people of the 1st and 2nd groups and disabled children under 18 who are not contraindicated for training in the chosen field of study, according to the Law of Ukraine "On Principles of Social Protection of the Disabled in Ukraine";
- individuals who have this right according to the Law of Ukraine "On the status and social protection of citizens affected by the Chernobyl disaster";
- individuals who have this right according the Law of Ukraine "On raising the prestige of miners' work" ;
- the children of the servicemen of the Armed Forces of Ukraine and other military formations and law enforcement officers who died in the line of duty, according to the Decree of the President of Ukraine from 21.02.2002 № 157 "On additional measures to improve care for the defenders, their legal and social protection, improving military-patriotic education of youth";
- the family members of miners and rescuers who died in the accident on the enterprise "The mine named after O. Zasiyadko", according to the Annex 6 to the Resolution of the Cabinet of Ministers of Ukraine from 09.01.2008 №6, "Some aspects of social protection of family members of the deceased miners and rescuers."

The number of individuals entitled to be enrolled hors concours accounts for 10% of state order in each field of study (except for the following areas of training: "Law" - 20% "Social Pedagogy" - 15%)

Enrollment by interview

Individuals are enrolled to NULESU by the results of the interview providing they have this right according to the Law of Ukraine "On the status and social protection of citizens affected by the Chernobyl disaster".

Individuals who have not been enrolled by the results of the interview have the right to apply on a general basis, if they have submitted the certificate of the Ukrainian Center for Educational Quality Assessment to the Admission Commission with no less than minimum number of grades in competitive disciplines.

Enrollment of participants in international competitions

Participants in international competitions are enrolled to NULESU upon submission of a certificate of the Ukrainian Center for Educational Quality Assessment with the number of grades no less than the minimum for admission to the competitive selection of participants in international competition, provided they apply for the fields of training related to the core subject which they took in an international competition.

Enrollment by competition

Other individuals admitted by the admission commission to participate in the competition shall be enrolled to NULESU according to the number of grades specified in the certificates of the Ukrainian Center for Educational Quality Assessment (or number of grades received in the entrance examinations in general subjects), average grade of a certificate of complete secondary education and additional grades. Applicants with incomplete higher education are enrolled according to the results of entrance examinations in major.

Winners (those awarded diplomas of I-III degree) of the 4th stage of the Ukrainian secondary school contests in basic subjects and winners (those awarded diplomas of I-III degree) of the 3rd stage of Ukrainian competition of scientific research papers among pupils-members of the Mala Academy of Sciences of Ukraine receive an extra point to the competitive grade for admission on the basis of secondary education (50 grades - diploma of the First degree, 40 grades - Diploma of the Second degree, 30 grades - Diploma of the Third degree), provided they enter the fields of training related to the core subjects of the contests in which they have won.

Professionally oriented young people who in the year of entry completed preparatory courses at NULESU, for admission on the basis of full secondary education for training in natural and mathematical and engineering fields of study when applying for admission to the relevant field of study at NULESU are given up to 20 grades according to the results of the final assessment.

Applicants who obtained educational and qualification level of junior specialist in the relevant field of study may be enrolled for vacant positions at the senior courses according to the number of grades gained at the entrance exams in majors.

The ***priority enrollment*** to NULESU is entitled to: individuals who have this right according to the Law of Ukraine "On Protection of Childhood", individuals who have this right according to the Law of Ukraine "On Principles of Social Protection of the Disabled in Ukraine", individuals who have this right according to the Decree of the President of Ukraine from 21.02.2002 № 157 "On additional measures to improve care for the defenders, their legal and social protection, improving military-patriotic education of the youth", individuals who have this right according to the Decree of the President of Ukraine from 12.09 .2007 № 849 "On the decision of the National Security and Defense Council of Ukraine from September 4, 2007 "On the main directions of financial support measures to improve living standards in 2008"; secondary school leavers (complete secondary education) awarded gold or silver medal for admission on the basis of full secondary education; graduates from higher school of I-III levels of accreditation who obtained educational and qualification level of junior specialist and have a diploma with distinction (for admission on the basis of incomplete higher education); university graduates of I-IV levels of accreditation, who obtained higher average grade in the appendix to the document about educational level obtained.

An appeal against the results of entrance examinations shall be submitted by an applicant in person no later than the day after the announcement of the results. An appeal is considered at a meeting of the Appeals Board no later than the day after its submission.

Applicants submit the documents to:

03041, Kyiv-41, str. Generala Rodimtseva, 19, building № 1, room 12.
How to get to the admission commission:
metro station "Lybids'ka", route taxi 212.
Documents are submitted daily from 8.30 to 17.30, on Saturday - from 9.00 to 14.00.
Sunday - Closed.
Phone: (044) 258-42-63, 527-83-08
http:www.nubip.edu.ua
E-mail: commission@twin.nauu.kiev.ua

1.5. The Academic Process Organization

There are the following forms of studying at National University of Life and Environmental Sciences of Ukraine:

- full time studying;
- extra mural studying;
- externship.

A full time studying is a basic form of obtaining a certain level of education or qualification.

An extra mural studying is a part-time form of obtaining a certain level of education an academic process of which, as a rule, consists of two laboratory and examination sessions the period of which (30-40 calendar days) is regulated by the Law of Ukraine “On Vacations”. In-between the sessions, the academic process organization is regulated by student individual possibilities and capabilities to continue studying according to the syllabi for self-education.

Externship is a special form of studying for the students who shall have a correspondent level of education (qualification) for them to be able to obtain a certain level of education or qualification while studying academic disciplines by themselves, examinations and the other forms of control, foreseen by their syllabi for self-education, being taking at the University.

An academic process is a structuralized system of organizational and didactic measures which aim at the realization of the education content of a certain education and qualification level according to the requirements of the national standards for higher education.

Scientific, humanistic, democratic and continuous principals of education and training to obtain different degrees are **the fundamentals of the academic process** the main objective of which is to educate and train intelligent and harmoniously developed personalities who are able to renew their knowledge, to be professionally mobile and to quickly adjust themselves under the transition period of reforming the national economy of agriculture and forestry.

According to the Law of Ukraine “On Higher Education”, **a system of degrees** in higher education **“associate degree-bachelor’s degree-specialist-master’s degree”** (**“bachelor’s degree-master’s degree”** – at the University’s basic institution) is implemented at NULESU. The system gives a wide range of possibilities to satisfy educational needs and to solve educational problems for a person, increasing universal education flexibility for professional training and the level of social protection regarding the changes of the needs of the economy and the labor market. It ensures a desired qualification to be obtained or sharpened concerning directions of professional training or specialties and correspondent educational programs.

The regulatory and legislative framework for the academic process organization at the University is **the Laws of Ukraine "On Education", "On Higher Education"**, the national standards for higher education, "The Regulation on the Academic Process at Higher Education Institutions", professional training programs for training qualified specialists of correspondent directions and qualification levels.

The content of education is a scientifically grounded system of the didactically and methodologically framed education material for different educational levels. The content of education is determined by education and training programs, structural and logical training schemes, curricula for disciplines, as well as by the other regulative acts of the state administrative and executive bodies for education and by higher institutions. The content is reflected in references, manuals, textbooks, methodological materials, and didactic means, as well as it also finds reflection during academic classes and other education activity forms.

An education program for professional training is a list of prerequisite and elective subjects with the volume of hours for studying and examining.

Structural and logical schemes are scientific and methodological grounds for the implementation of education programs for professional training.

The content of education consists of prerequisite and elective parts. The prerequisite part is determined by the correspondent national standards for higher education, whereas the elective one is determined by the scientific councils of the faculties of the University.

The main normative document determining the academic process organization for a specific direction of education and training **is a curriculum** that is realized by the dean's offices of the University on the grounds of education programs for professional training and structural and logical schemes for education and training. Lists of prerequisite and elective subjects and their volume, sequences of studying the subjects, forms of classes and their quantity, charts for the academic process, forms and means of examinations are determined by the curriculum. The curricula are approved by the University Chancellor. It is designed for each academic year.

The place of a discipline and its importance, its annotation and the requirements for the level of knowledge and skills obtained are determined by the training program in the discipline. Regarding the education program and the curriculum, training programs specifying outlines, sequences, organizational forms and hours, forms and means of examination determined for studying disciplines are designed by correspondent departments.

The academic process at the University has the following forms: classes, individual tasks, student individual tasks, practical training, and examinations.

Lectures, laboratory research, practical classes, seminars, individual classes, consultations are the main forms of classes.

The organization of classes is scheduled for semesters (trimesters) according to the annual schedule for the academic process.

Student individual tasks are the main form to obtain knowledge and skills out-of-class. The hours determined for student individual tasks that are to be not less than half the total hours of student academic hours for studying a specific discipline are regulated by the curricula.

Student practical training is a compulsory component of the training program for obtaining a qualification level that aims to have students acquire professional skills. It takes place at the independent subdivisions of NULESU educational and research farms and research stations, at advanced modern agricultural and forestry enterprises under scientific supervision of scientific and training staff of the University and experts from the enterprises.

Control is divided into a current control and a final control. During practical classes, laboratory research and seminars, the aim of the current control is to assess students' preparation to be able to carry out specific tasks. Forms of the current control are determined by correspondent departments. Moreover, in accordance with the requirements of a module-rating system of education and training that has been implemented at the University, after the content module is over, an obligatory assessment of how well the students have learnt the material takes place.

The final control aims to assess the results of education and training at a certain education level or at its separate finished stages. According to "The Regulations on Examinations and Credits at NULESU", the final control takes two forms: an examination or a credit in a specific academic discipline.

A credit is a form of assessing of student laboratory research and practical in-class activities, of student knowledge about separate parts of academic disciplines, course projects (papers), educational and practical training. Credits in laboratory research and practical in-class activities are to be over before examination sessions start.

Examinations (course examinations) aim to assess student knowledge about academic disciplines, students' abilities to creatively apply their knowledge and skills obtained in order to solve practical problems of their professional direction.

Examinations are to be taken during the period of examination sessions according to the academic calendar of the University and the schedules of the academic process.

Examination results are scored according to the national four-grade scale – "excellent", "good", "satisfactory", "unsatisfactory" and to European Credit Transfer and Accumulation System (ECTS) – A, B, C, D, E, FX, F. *For conversion from the Ukrainian national grades into ECTS grades see Table 1.5.* Credit results are scored by the national marks "passed" and "failed" and by the correspondent ECTS grades.

Student academic workload is determined by the number of time measure units for training programs. An academic hour, an academic day, a week, a semester, a course and a year are student academic workload time units.

An academic hour is a minimum academic student workload unit in which there are 45 minutes.

An academic student day lasts no longer than 9 academic hours, an academic week – 54 academic hours among which there shall be the following number of hours for in-class activities: training programs for EQL "Associate " and EQL "Bachelor" – 30 hrs, EQL "Specialist" – 24 hrs, EQL "Master" – 18 hrs, the other academic hours being for student individual tasks.

One of the peculiarities of the academic process organization at NULESU is **a credit-module system of education** for all the training courses and programs for professional training of EQL "Bachelor", EQL "Specialist" and EQL "Master" witch is regulated by "The Regulations on the Credit-Module System of Education at NULESU".

Dividing the content of each academic discipline considering its volume and structure into several content modules is **the principle of module training**. **A content module** is a logically completed part of theoretical and practical material of academic disciplines that contains, as a rule, several lecture topics, practical classes (seminars), laboratory research, calculation problems and so on. The number of content modules for one discipline is determined by the scientific and research faculty member who is responsible for the discipline, the number being approved at the meeting of the chair. Content modules are included into the curriculum for the discipline.

It is recommended that there be from 2 to 4 content modules for one discipline within the period of one semester with an obligatory control over the knowledge obtained. Knowledge and skills are acquired in-class and individually by students while doing individual tasks assigned.

Total academic workload (in-class and out-of-class activities, individual tasks, etc.) is measured in hours and ECTS-credits (one ECTS-credit corresponds to 36 hrs.)

Table 1.5. Conversion from the Ukrainian National Grades into ECTS Grades

The Ukrainian National Grade	ECTS Grade	best/next at the European Universities	Definition of the ECTS Grading	Student Rating, Score
1	*2*	*3*	*4*	*5*
Excellent	**A**	10	**EXCELLENT** – outstanding performance with only minor errors	**90 – 100**
Good	**B**	25	**VERY GOOD** – above the average standard but with some errors	**82 – 89**
	C	30	**GOOD** – generally sound work with a number of notable errors	**74 – 81**
Satisfactory	**D**	25	**SATISFACTORY** – fair but with significant shortcomings	**64 – 73**
	E	10	**SUFFICIENT** – performance meets the minimum criteria	**60 – 63**
Unsatisfactory	**FX**	-	**FAIL** – some more work required before the credit can be awarded	**35 – 59**
	F	-	**FAIL** – considerable further work is required	**00 - 34**

An overall student academic workload is not less than 60 ECTS-credits per academic year, 30 ECTS-credits per semester, and 20 ECTS-credits per trimester.

At the University, after a logically completed part of lectures and practical classes (a content module) for disciplines is over and at the stage of a final control of knowledge and skills, students' levels of knowledge and skills are assessed according to **student assessment rating.** The student assessment rating doesn't eliminate a traditional grading system, both assessment systems being used together. However, that makes the assessment system more flexible, objective and promoting systematic and active individual student performance during the whole period of studying, ensuring a sound competition among the students in their learning, facilitating student capacity outcome and development.

The student assessment rating in academic disciplines, course papers (projects), reports on all training practices (training and production), state examinations, graduation projects (graduation bachelor's papers, graduation papers (projects) and graduation master's papers) is scored **on the 100-point scale.**

The student rating for knowing academic disciplines comprises of their training rating – 70 points the highest and their attestation rating – 30 points the highest. Consequently, a content module being a constituent part of educational content of an academic discipline is scored 70 points the highest. Rating grades in content modules, as well as an attestation rating, is scored on the 100-point scale.

For grades to be logged into an examination record, a student grade record and a student assessment register, the rating in different types of academic training is transformed into national grades and ECTS-grades according to the points of a student (*see Table 1.5.*).

The students having 60 points and more in academic training have the right not to take an examination (credit) and to get an examination grade (a credit) "Automatically" according to the number of the points they have being transformed into national grades and ECTS-grades (*see Table 1.5.*).

If the students want to get a higher rating to get a better grade in academic disciplines, they go through a semester attestation which is obligatory to be taken by the students having less than 60 points for their academic training. To be allowed to take a form of attestation, a student is required to have not less than 60 points for each content module that is not less than 42 points for academic training.

The students with a higher rating for education have the following benefits:

- workplace after their graduating from NULESU;
- accommodation and scholarships;
- a better choice where to have production and training practices;
- individual academic plans and schedules;
- transfer to another specialty;
- probation abroad;
- advantages when they take part in contests to continue their education after getting their bachelor's degrees.

In order to promote the student and faculty mobility, a key point of Bologna process, academic disciplines are instructed in the English language at NULESU. The majority of disciplines are instructed in English for special groups of students in fifteen directions of bachelor's degree training programs and the correspondent specialties of master's degree training programs:

- Veterinary Medicine;
- Agronomy;
- Plant Protection;
- Biotechnology;
- Ecology, Environmental Protection and Sustainable Use of Natural Resources;
- Management;
- International Business;
- Administrative management;
- Accounting and Auditing;
- Finance and Credit;
- Economic Cybernetics;
- Geodesy, Cartography and Land Management;
- Production Technologies and Processing of Livestock Products;
- Philology (Translation);
- Social Pedagogy,

which allows the graduates who are proficient in the English language to more quickly adapt to the contemporary requirements of the national and international labor markets, or to continue their education at the leading universities of the world and to occupy top positions at different international companies.

Another peculiar feature of the academic process organization at the University is **a possibility for those who has Associate degree to continue their education within a shortened (up to two years) bachelor's degree training program**, if the specialty they have belongs to a training direction which they apply to. There are 18 directions for that:

- Veterinary Medicine;
- Park and Gardening;
- Technology of Wood processing;
- Agronomy;
- Plant Protection;
- Ecology, Environmental Protection and Life;
- Processes, Machinery and Equipment of Agricultural Production;
- Energetics and Electrical Technical Systems for the AIC;
- Automation and Information Managing Systems and Technologies;
- Transportation Technology (according to a means of transportation);
- Accounting and Audit;
- Enterprise Economics;
- Finances and Credit;
- Management;
- Law science;
- Geodesy, Cartography and Land Management;
- Technology of Production and Processing of Livestock Products;
- Food Technologies and Engineering.

According to the results of entrance examinations, associates are enrolled in the first year of studying of a separate batch with the period shortened in two years or the second or third year of studying, the choice of which depends on their academic gap in the curricula (if this happens, they study according to their individual plans). The peculiarity of the academic process organization was created in 2005 and since then, it has been meeting the regulations of Article 13 of the Law of Ukraine “On Higher Education”.

A leveling-off summer semester is organized at the University for the associates who were enrolled in the 2-3 years of studying of bachelor’s degree training programs of their training directions correspondent to their specialties. The aim of the semester is to narrow an academic gap among the curricula for Associate degree and Bachelor's degree. Thus, it is to make their education and training at the University easier.

In 2012 a leveling-off summer semester was organized for the students of 24 training directions who studied 211 academic disciplines and who were examined in 120 disciplines belonging to the academic gap. The University charges for the education during a summer semester. The payments additional education services provided during a summer semester are transferred to a special fund of the University.

1.6. Student Practical Training

Student practical training is a constituent part of the academic process at National University of Life and Environmental Sciences of Ukraine. It is regulated by “The Regulations on Student Practical Training at Higher Education Institutions of Ukraine”, approved by Order 351 of the Ministry of Education of Ukraine , 20.12.1994, and by “The Regulations on NULESU Student Practical Training”, approved by Order 351 of the University Chancellor, 26.05.2011.

NULESU **student practical training aims to** generalize theoretical and practical knowledge and skills obtained, to sharpen professional knowledge and skills to meet the requirements of education and qualification levels for qualified professionals with higher education and to ensure professional training quality improvement.

The objectives of practical training are:

1) to train a professional able to solve organization and production problems under current market conditions, knowing methods and techniques of innovative technology;

2) to obtain skills in:

- making decisions in specific situations;
- implementing advanced technology and scientific findings into production;
- team working;
- a certain profession.

NULESU student practical training is a continuous and coherent process which goes on during the whole period of studying, which facilitates certain competences acquired by future bachelors, specialists and masters.

Practical training includes laboratory research and practical classes, training and production practices of students.

Laboratory research takes place at university laboratories specially equipped with facilities for the academic process (training hardware, machinery, etc.). Labs for the students of Technology of Production and Processing of Livestock Products, Veterinary Medicine, Agrobiology, Plant Protection, Engineering for Agrobiosystems, Design Engineering for Machinery and System of Nature, Forestry, Economics, Agricultural Management, Foodstuffs Technology and Quality and Safety of Livestock Products take place in real professional environment – at educational and production and educational, scientific and production laboratories of the educational and research farms of NULESU.

Practical classes take place in classrooms or in the University laboratories equipped with necessary technical means for teaching and computerized. Practical training includes solving problems of different levels of difficulty, tests to assess how well the students have learnt crucial theoretical principles and grounds, which are to be prepared before it occurs for the students to practice solving them in class.

The students have to take **training practices** when they are in their first and second years of doing bachelor's degree training programs at educational, educational and scientific, educational, scientific and production laboratories, clinics, workshops, on the fields of the educational and research farms (ERF) of NULESU, as well as at the leading companies, enterprises, organizations and institutions of Ukraine and other countries that meet the requirements of the education programs for professional training to get a bachelor's degree. The practices aim to introduce specific features of directions and specialties to the students for them to be competent meeting education and qualification characteristics, and, in some cases, for them to get a working profession out of the number of a wide range of professions of a correspondent field. Training is supervised by the scientific and teaching stuff of the University and the leading specialists of ERF of NULESU. According to the University chancellor's order, they are responsible for training practice programs to be completed. The practices are also supervised by the staff of the student practical training educational and scientific center (SPTESC) assisting directly at ERF to ensure the training programs' tasks to be done.

Production training (technological, operational, engineering, teaching, in economics and so on) is to be taken by undergraduates (bachelor's and master's training programs). The training aims to widen deepen and sharpen the skills obtained by the students while studying cycles of special disciplines, which helps the students get new skills required to be able to use their knowledge and skills for production. It also aims at improving professional skills and at gathering actual material and data for graduation course papers (EQL "Bachelor" and EQL "Master"). Production training takes place at educational and educational, scientific and production laboratories, ERF of NULESU, as well as at the leading companies and enterprises of Ukraine and other countries according to the contracts signed. Training is supervised by the scientific and teaching stuff of the University's chairs and top management of farms, enterprises, organizations and institutions. Moreover, the staff of SPTESC assists in production training at ERF of NULESU.

Scientific and research graduation practice is a final stage of practical training being a period of preparation to graduation course papers (EQL “Bachelor” and EQL “Master”). Undergraduates take it during their last year of studying to generalize and sharpen their skills, to master experience in their professions to get ready for their further work without supervision, as well as in order to find actual data for graduation course papers.

Places for student practical training

Educational, educational and scientific, educational, scientific and production laboratories of the basic institution of NULESU and its separate subdivisions (SS), mainly ERF of the University for labs and classes, as well training, technological, scientific and research, graduation and other training in Plant Protection, Animal Husbandry, Processing and Storing Crop Production, Technology for Biodiesel Production, Livestock and Fish Breeding, Methods for Diagnosing and Preventing Animal Diseases, Maintenance Technology, Agricultural Machinery Maintenance and Testing, Forestry, Woodprocessing, Hunting and Game Laws, Economics, Accounting, Marketing and Management in the agricultural production, etc.

NULESU has the following places for practical training:

- 3 research stations - SS of NULES of Ukraine "Agronomy Research Station", SS of NULES of Ukraine "Boyarka Forest Research Station" (Kyiv Oblast), educational and research station of hill gardening, viticulture, horticulture and forestry, village of town type Foros (AR the Crimia);
- 6 educational and research farms - SS of NULES of Ukraine "Velyka Snitynka Training and Research Farmstead named after O.V. Muzichenko", SS of NULES of Ukraine "Training and Research farmstead "Vorzel" and ERF SS of NULES of Ukraine “Nemishayevo Agrotechnical College” (Kyiv Oblast), State enterprise (SE) “Training and Research Breeder Plant” named after Frunze of NULESU”, ERF SS of NULES of Ukraine “Zalishchyky College of Agriculture named after. E.Khraplivyi” and ERF SS of NULES of Ukraine “Nizhyn Agrotechnical Institute” (Chernihiv Oblast);
- special places for practical training at regional higher education institution of NULESU of I-II accreditation levels;
- Training and Research Centre of Biology and Ecology of Subtropical Plants and Landscape of NULESU (Yalta, AR the Crimea);
- Botanic Garden of NULESU.

The total area of agricultural lands under the structures mentioned above is more than 35 000 ha, including approximately 18 000 ha of woods, fields under research, green houses, livestock complexes, automobile and tractor garages, workshops, polygons, manufactories etc.

The farms of the University are located in different soil and climatic zones of Ukraine – Woodlands, Steppe and Subtropics (AR the Crimea). The specific features of the practical training places of the University are correspondent chairs and their branches, as well as over 80 training and production and training and scientific and production laboratories which are the places for the students’ labs and practical classes, training and production practice, etc.

At **SS of NULES of Ukraine “Agronomy Research Station”**, students study modern technologies for crop production, taking part in raising elite seeds of winter and spring crops, vegetables and fruit and elite seedlings of elite crops. There are training and production subdivisions of crop and livestock production raw processing and a bank of agricultural crop kinds at the station which store approximately 300 kinds of wheat, barley, peas, oats, maize, sugar beet, rapeseed, soybeans, potatoes, vegetables, etc.

There are 5 forestry parks and 2 wood processing manufactures, a botanic garden of the University which has more than 700 kinds of trees and bushes in the structure of **SS of NULES of Ukraine “Boyarka Forestry Research Station”.** These subdivisions of NULESU

are perfect training places for the students from the faculties of Forestry and Park, Gardening and Landscape. The students study advanced technology for forest plantations, forest protection against pests, forest care, logging and wood processing.

SS of NULES of Ukraine "Velyka Snitynka Training and Research Farmstead named after O.V. Muzychenko" has educational, scientific and production laboratories in crop production and livestock breeding. Wheat, peas, oats, triticale, buckwheat, vetch, sugar beet, rape, maize, potato, vegetables, root crop, annual and perennial grasses are grown there. The Chair of Machinery Testing and Practical Training, that provides the agricultural machinery and electrical facilities of the farm with maintenance being serviced by the students, is located at the farm. The processing enterprises – manufactures of cheese, sausages, pasts and bakery products, and equipped educational laboratories are situated there as well.

The specialization of **SS of NULES of Ukraine "Training and Research farmstead "Vorzel"**is dairy and meat products. While taking their training, the students have a possibility to study the cycle of breeding abardyn-anhuska and Ukrainian black speckled breed of cattle, growing vegetables in greenhouses. Oats, potatoes, vegetables, corn, annual and perennial grasses are grown there.

State enterprise (SE) "Training and Research Breeder Plant" named after Frunze of NULESU" is located in Autonomous Republic of Crimea. Its main activities are selecting and breeding pedigree poultry and milk production. Barley, oats, maize, annual grasses, etc. are grown there.

Training and Research Centre of Biology and Ecology of Subtropical Plants and Landscape of NULESU is located in village of town type Nikita (Yalta) on the territory of Nikitsky Botanic Garden – the National Scientific Center of the NAAS of Ukraine, in a laboratory building. The students take their practical training and scientific research in biotechnology, ecology, forestry recreation, nature conservation, subtropical crop production, landscape and park and gardening for subtropical conditions.

Training and production practice of the students of **SS of NULES of Ukraine "Berezhansky Agrotechnical Institute"** takes place at arboretums "Berezhansky", "Raivsky Park", educational and production place "Garden", nursery ornamental crops, educational and research laboratories of biogas and biofuel, production workshops.

At **SS of NULES of Ukraine "Nizhyn Agrotechnical Institute"**, professional practical training is provided by ESF having a laboratory of crop production, a farm in which the loose boxed cattle and De Laval milking equipment. Barley, pea, oats, maize, rape, annual grasses are grown there.

Agricultural lands, collection and research field, educational, scientific and production laboratories of mycology, fisheries, livestock, poultry, farm pond (19.6 ha), machine and tractor garage with workshops, operated granaries are the places of the student practical training.

Wheat, oats, potato, vegetables, maize, annual and perennial grasses are grown at **ERF SS of NULES of Ukraine "Nemishayevo Agrotechnical College"**. It also has fish-breeding and fruit processing manufactures.

ERF of **SS of NULES of Ukraine "Zalishchyky College of Agriculture named after. E.Khraplivyi"**, a laboratory of ecological expertize, collection and research field, an arch greenhouse are the places of student training and production practice of students. Wheat, oats, peas, buckwheat, maize, potato, vegetables are grown there.

The mentioned above practical training places are the places where NULESU implements advanced agrotechnologies at the expense of the cooperation with well-known foreign companies: John Deere (the USA), Valtra Valmet (Finland), M&P Farma (Switzerland), ACCO (Denmark), Alfa Laval Ukraine (Sweden) VUZT (Chech), FML (Germany) that provide the University with advanced technology, equipment, agricultural machinery etc.

The places for NULESU student practical training includes leading institutions, enterprises, organizations of different ownership in Ukraine and abroad that meet the requirements of the education programs for professional training. The University and the practical training places sign agreements with passports being kept in the Academic Department and deans' offices. The period of the agreements is the period of a definite practical training or a five-year term.

1.7. The Academic Staff

More than 3 000 of the academic staff ensures the academic process and scientific research at University of Life and Environmental Sciences of Ukraine. There more than 1500 of the faculty working at the basic institution of the University (Kyiv), including 288 doctors of sciences and professors, 1000 candidates of sciences and assistant professors.

Among the academic staff of the basic institution of NULESU, there are:

- Heroes of Ukraine – 2;
- Academicians of the NAS of Ukraine – 1;
- Academicians of the NAAS of Ukraine – 13;
- Correspondent Members of the NAS of Ukraine – 4;
- Correspondent Members of the NAAS of Ukraine – 20;
- Correspondent Members of the APS of Ukraine – 1;
- Honored Workers of Science and Technology of Ukraine - 20
- Honored Workers of Education and Public Education of Ukraine – 13;
- Honored Workers of Higher School of Ukraine – 2;
- Honored Inventors of Ukraine – 2;
- Honored Workers of Transport of Ukraine – 1;
- Honored Doctors of Ukraine – 1;
- Honored Workers of Veterinary Medicine of Ukraine – 1;
- Honored Workers of Agriculture – 8;
- Honored Electrical Engineers – 1;
- Honored Constructors of Ukraine – 2;
- Honored Economists of Ukraine – 4;
- Honored Foresters of Ukraine – 1;
- Honored Lawyers of Ukraine – 1;
- Honored Workers of Culture and Sports of Ukraine – 4;
- Honored Masters of Folk Art – 1;
- Honored Artists of Ukraine – 3;
- Honored Coaches – 1;
- Masters of Sports of Ukraine – 1;
- State Prize Winners – 16.

365 Doctors of sciences and Professors and 1435 Candidates of sciences and assistant professors work at all structural divisions of NULESU.

The scientific and academic staff of a higher qualification take post-graduate and doctoral courses. 575 postgraduate students (242 of which are at the extra mural department) and 69 searches are taking postgraduate programs, 27 PhD students are doing doctoral programs.

The work and performance of 20 specialized scientific councils for defending dissertations to get a degree of Candidate of Sciences in 78 specialties and a degree of Doctor of Sciences in 64 specialties is organized and coordinated by the education and scientific center of education and attestation of the academic stuff of a higher category. The faculty members and postgraduate students submitted and defensed 7 dissertations

to get a degree of Doctor of Sciences and 76 dissertations to get a degree of Candidate of Sciences in 2012.

15 doctors of sciences joined the academic staff of the University in 2012.

1.8. The Facilities of the University

The place of the main location of the basic institution of National University of Life and Environmental Sciences of Ukraine is Holosievo, one of the picturesque places of the City of Kyiv.

There are 17 educational buildings of the basic institution of the University, educational, educational and scientific and educational, scientific and production laboratories located at NULESU separate divisions – educational and research farms and research stations – in Kyiv, Chernihiv, Ternopil Regions and the Autonomous Republic (AR) of Crimea for the academic process to take place and for the students to get their practical training. They have all necessary facilities for the academic process to be ensured to be of high quality.

Students enjoy a modern scientific library, in the fund of which there are 1 000 000 books, 400 000 of which are references, textbooks and manuals and 610 000 – scientific literature; a campus of 14 student residence buildings in which approximately 80% of the students studying full time live, a canteen, snack bars, etc. Moreover, the educational and research farms (ERF) and research stations of the University have their own student resident buildings to provide the students with accommodation while taking practical training:

- Agronomy Research Station – for 100 people,
- Velyka Snitynka Training and Research Farmstead named after O.V. Muzychenko – for 110 people,
- Boyarka Forestry Research Station – for 120 people,
- Educational and Research Farm "Vorzel" – for 75 people,
- Training and Research Breeder Plant" named after Frunze of NULESU – for 50 people,
- Training and Research Centre of Biology and Ecology of Subtropical Plants and Landscape of NULESU – for 70 people.

The sports complex of the basic institution of the University includes a modern open stadium and a building to have physical training and go in for sports.

The Ukrainian Laboratory of Quality and Safety of Agricultural Products, the Ukrainian SRI of Agricultural Radiology, the State Research and Project Institute "Conservpromcomplex" (Odessa) and other facilities form the structure of the University.

The Southern Filial of NULESU "Crimean Agrotechnological University" (AR the Crimea) and separate divisions of NULESU – 12 regional higher education institutions of I-III levels of accreditation in different regions of Ukraine: Berezhany Agrotechnical Institute (Ternopil region), Nizhyn Agrotechnical Institute (Chernihiv region), Irpin' College of Economics, Nemishayevo Agrotechnical College, Boyarka College of Ecology and Natural Resources (three institutions are located in Kyiv region), Zalishchyky College of Agriculture Named after. E.Khraplivyi (Ternopil region), Bobrovytsia College of Economics and Management Named after O. Mainova (Chernihiv region), Mukacheve College of Agriculture (Zakarpattia region), Pryberezhne College of Agriculture, Crimean Agroindustrial College, Bakhchisarai College of Construction, Architecture and Design, Crimean Technical College of Reclamation and Mechanization of Agriculture (four institutions are located in AR the Crimea) and 5 training information consulting centers (TICC): Tarashcha TICC (Kyiv region), Bobrovytsia TICC (Chernihiv region), Lubny TICC (Poltava region), Malyn TICC (Zhytomyr region) and Mukacheve TICC (Zakarpattia region) are the University's functioning parts.

Each institution has its own educational buildings and student residence buildings, some of them having training and research farms, fields under research etc.

1.9. Information and telecommunication support of the educational process

The main objective of the university – to train highly qualified specialists for the agricultural sector with up-to-date computer knowledge and skills. In order to make efficient use of ICT in the educational process, there has been created a corporate information-educational environment (IEE), which includes the following components: well-developed computer infrastructure, software platforms, information and educational resources and a system of IEE management (Fig. 1).

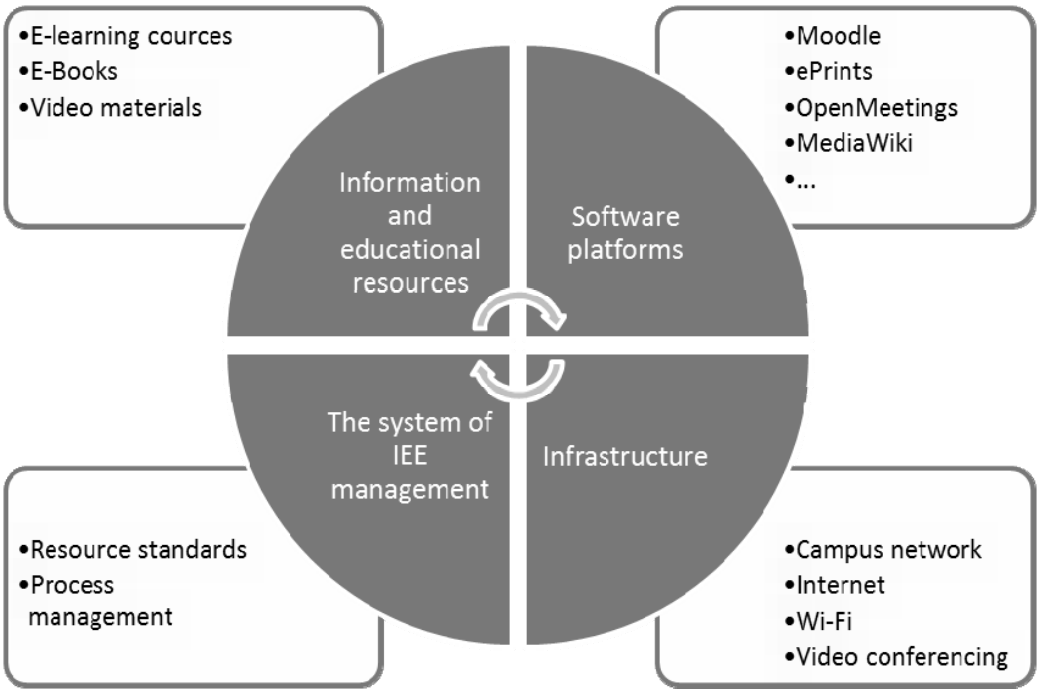

Fig.1. Information - Educational Environment of NULESU

The University infrastructure provides students with an access to information and educational resources. On average, there is one computer per 3.4 students at the University. By the end of 2012 the university information system had 2872 computers. They are supported by servers with the following operating systems: Windows 2003 Advanced Server (6 server licenses available) and SQL Server 2000 (one license available) as well as 12 servers on Open Source software Unix Free BSD and Linux. All educational buildings and student residence buildings are connected to the Local Area Network (LAN) with a bandwidth of 1 Gbps in each direction, and there is also a local Wi-Fi network with free access to the Internet. In order to support educational process and research activities, the university uses the services of internet provider "Ukrcom" with a bandwidth of 200 Mbps with access to foreign and national Internet. In addition, to provide remote lectures at regional educational institutions and the smooth operation of Administrative Services, the university leases a data channel with a bandwidth of up to 100 Mbps of Ukrainian traffic and up to 70 Mbps of foreign traffic (service provider Scientific Production Company “VOLZ”). To support teaching activities in information-educational environment the university makes use of the following software platforms:

- Learning and Information Portal (moodle.nubip.edu.ua), which contains e-learning courses (ELC) for students at 12 education and research institutions. Each academic discipline that is taught to students is supported by e-course with theoretical material resources for laboratory and practical work, independent work, interim and final control. University experts have developed a standard structure of ELC, its certification, as well as training system for teaching personnel to develop such e-courses;

- an electronic archive of scientific and educational materials (http://elibrary.nubip.edu.ua), which includes electronic copies of papers of the university lecturers, proceedings of the conferences held at the University, abstracts of theses defended at NULESU, Masters' scientific papers and theses, books and teaching guidelines to support the learning process, a description of open e-learning courses, patents;

- Wikiportal (http://agrowiki.nubip.edu.ua), where scholars, educators and students place thematic articles on the problems of research, standards (Codex Alimentarius, ISO, JMA, BS), portfolios;

- Video Portal (http://video.nubip.edu.ua), which houses educational videos, video lectures and other video resources produced at the University and used in training, educational and cultural activities.

The university closely cooperates with regional educational institutions using the technologies provided by information and educational environment of NULESU. In particular, the university teachers give video lectures to students at the separated subdivisions: "Mukacheve Agricultural College", "Bobrovytsia College of Economics and Management named after O.Mainova ", "Zalishchyky Agricultural College named after Ye. Khraplyvy ", "Berezhany Agrotechnical Institute ", "Irpin Economic College ", "Nizhyn Agrothecnical Institute". In June - July 2012, NULESU and the University of Wageningen (Netherlands) held an international workshop for students with a wide use of video conferencing.

1.10. Scientific library

Scientific Library is a modern, scientific, cultural, educational, information center that meets the users' needs of getting the latest information, and at the same time it creates information culture of future specialists who will work in absolutely new information society.

The history of the scientific library begins in 1904, when the library of an agricultural study group of Kyiv Polytechnic Institute was founded; later it became the library of agricultural department of KPI. Since 1924 it had been the library of Kyiv Agricultural Institute. After the creation of Ukrainian Agricultural Academy in 1954 collections of former agricultural, veterinary and forestry institutes were united. As the result the library collection numbered 112,467 books, booklets and periodicals. Scince1992 – the library of Ukrainian State Agrarian University, since 2000 – the library of National Agrarian University, the current name is the scientific library of National University of Life and Environmental Sciences of Ukraine.

Due to the improvement of material and technical basis the structure of the library was changing too, provision of training process with necessary the literature was getting better, subjects of book acquisition was expanding, readers quality service was also improving.

The main task of the scientific library of University is to develop library collections to meet the needs of users in various specializations. Diversified Library collection numbers more than one million copies of national and foreign books, including rare books (since 1779), abstracts of theses (since 1950), theses (since 1946), The Library annually subscribes to more than 300 titles of journals and more than 50 different newspapers.

The collection of rare, valuable documents contain more than 3500 units. The real gems of the fund are rare and unique books such as: "The News of Petrovsk Arable Farming and Forest Academy" (1779), "Russian Chronicle by Nikonov list" (p. 3, 6, 7, 1786-1791), "Archive of Veterinary Sciences "," Forest Journal "(1873), etc.

Information and bibliographic desk (electronic, alphabetical, systematic catalogs and card indexes) facilitates wide and overall use of the library collection. The main technological processes have been automated in scientific library. Since September 2011 the scientific library has begun to give books to users in automated mode. To familiarize freshmen with the library according to the program "Information culture" the classes how to use library information search facilities (both traditional and electronic catalog) are organized by the library staff. The scientific library organizes information mass events devoted to current university issues.

Scientific Library - a great focal point that works with independent divisions NUBiP Ukraine. Research Library staff perform methodical and scientific work, participate in international conferences, seminars, and more.

The information about the Scientific library, including its resources (electronic catalog, bibliographies, portal AGORA, URAN) can be found on the library site: http://library.nubip.edu.ua. The library provides access to international databases (EBSCO, AGORA).

Since 2006 the Scientific Library has become a depository library of FAO (FAO - Food and Agricultural Organization) in Ukraine. The Depository fund contains 700 documents in English, including analysis, statistical compilations, reports compiled in the electronic catalog of the scientific library. Some materials come with CD-ROMs. Literature of FAO is stored in the central library.

The square of the library is 2844 м^2. Scientific library users are serviced in 8 lending libraries and 8 reading rooms for 580 seats. The scientific library comprises 5 departments and affiliates of the scientific library.

The department of book acquisition, scientific processing of documents and catalogues organization. The main task of the department is full, theoretically substantiated acquisition of library book collection to support training and educational process and research activity of the University.

The department of book acquisition, scientific processing of documents and catalogues organization provides:

- ordering the purchase of necessary literature for university departments in automated manner;
- control the just-in-time delivery of ordered literature to the scientific library;
- transferring received literature to the library affiliates and departments for proper storage;
- subscription of Ukrainian and Russian periodicals;
- individual and total accounting of documents transferred to the library in traditional and electronic forms (applying bar code technology);
- daily databases filling of electronic library catalog with bibliographic descriptions of new literature acquisitions;
- Organization and updating of systematic, alphabetic and electronic catalogs;
- scientific researches collections exchange with 26 higher education institutions of Ukraine of agrarian profile.

Information and bibliography department. The main task of the department is to quickly and fully meet the information needs of scientific library users. The department provides such services:

- Library dissertations collection (over 5,000 units);
- Master Thesis collection (500 items);

- research papers of 26 higher educational establishments of Ukraine of agrarian profile;

- Ukrainian and Russian periodicals.

Information and Bibliography Department:

- compiles indexes and lists of literature according to the topics of research papers and to support the training process at the University;

- encrypts scholars and students' research papers according to the tables of the Universal Decimal Classification (UDC);

- daily filling of electronic library catalog with analytic descriptions of articles from periodicals, collections of research papers, and bibliographies prepared by the department staff.

Information and bibliographic department organizes and conducts:

- « Department days," " Master days ", "Information days" for information service of users;

– subject book exhibitions devoted to key issues, as well as jubilee exhibitions of outstanding University scientists;

– "information culture" classes for first year students, postgraduates and masters to make them familiar with resources (both external and internal), access to which is provided by the library;

The department of information technologies and computers support. The main task of the department is to support functioning of the automated library and information system "IRBIS-64" and maintain electronic information resources of the library. The department provides such services:

– Library electronic catalogue (contains more than 120,000 of bibliographic descriptions of books, periodicals, authors' abstracts, dissertations and other documents available in the library);

– collection of electronic library resources (including portal - AGORA, international databases EBSCO, BioOne, etc.);

– Free Internet access and Wi-Fi.

The department of information technologies and computers support:

– supports Website of scientific library (http://library.nubip.edu.ua);

– fills the library users database to service them in automatic mode;

– digitization of collection of rare and valuable books to place them in the database of electronic catalog;

– computers after-sales service.

Department of academic literature provision. The total books collection of the department is 51176 items (books, periodicals, instructions to laboratory and practical works).

Visitors can use lending library of training literature, reading room for 140 seats, free Internet and Wi-Fi access.

The department has training and scientific literature in:

- Agronomy
- Plant Protection
- Plant Biotechnology
- Ecology
- Fish farming
- Feeding and breeding
- Genetics of plants and animals
- Technology of production and processing of livestock products
- Quality management of agricultural products

- Pedagogy
- Psychology
- Culturology

The department of scientific literature and fiction provision. The main task of the department is to provide users with scientific literature and fiction. Book collection of the department is more than 450,000 items, including:

- 400,000 copies of scientific literature
- 58,000 copies of fiction
- 9500 copies of foreign literature

For use:

– Order of an unavailable book in the library collection according to interlibrary subscription (ILS) from the largest library of the country - the National Library of Ukraine named after V.I. Vernadskyi;

– The collection of rare, valuable documents contain more than 3500 units. The real gems of the fund are rare and unique books such as: "The News of Petrovsk Arable Farming and Forest Academy" (1779), "Russian Chronicle by Nikonov list" (p. 3, 6, 7, 1786-1791), "Archive of Veterinary Sciences "," Forest Journal "(1873), etc.;

– Depository library of FAO (FAO - Food and Agricultural Organization), which stores more than 900 documents in English and Russian including analytical materials, collected statistic data, reports.

Affiliate of scientific library of technical ESI. The total book collection of the affiliate is 48900 items (books, periodicals, instructions to laboratory and practical works).

Visitors can use lending library of academic literature, reading room for 83 seats, free Internet and Wi-Fi access.

The department has academic and scientific literature in:

- Power engineering
- Heat engineering
- Electrification of Agriculture
- Information science
- Construction
- Transport
- Logistics
- Mechanization of agriculture
- Metallurgy & Metalworking
- Theory of machines and mechanisms
- Repair of agricultural machinery
- The continuing exhibition of artworks (paintings) of one of the scholars of the University - Professor, Doctor of Medical Sciences Tsapok V. G. is represented in the affiliate that attracts both students and guests of the University.

Affiliate of scientific library of forestry and park-gardening ESI. The total book collection of the affiliate is 22567 items (books, periodicals, instructions to laboratory and practical works).

Visitors can use lending library of academic literature, reading room for 40 seats, free Internet and Wi-Fi access.

The department has academic and scientific literature in:

- Forestry
- Wood processing technology
- Park-gardening
- Landscape and design
- Floriculture

- Hunting science
- Green tourism

The continuing exhibition of the best graduating works of students (landscape tapestries, paintings, flowers compositions), which are placed on the walls of the library reading room, decorates the affiliate.

Affiliate of scientific library of business ESI. The total book collection of the affiliate is 51800 items (books, periodicals, instructions to laboratory and practical works).

Visitors can use lending library of academic literature, reading room for 80 seats, free Internet and Wi-Fi access.

The department has academic and scientific literature in:

- Economy of enterprises
- Accounting and Audit
- Finance
- Management of organizations and administration
- Management of foreign economic activity
- Marketing
- Economic Cybernetics
- Agricultural Economy and Agribusiness Organization
- Banking, Taxation & Insurance
- International trade
- Intellectual property

Affiliate of scientific library of ESI of land resources and law science.

The total book collection of the affiliate is 13800 items (books, periodicals, instructions to laboratory and practical works).

Visitors can use lending library of academic literature, reading room for 47seats, free Internet and Wi-Fi access.

The department has academic and scientific literature in:

- Monitoring of land
- Monetary estimation of land
- Land cadastre
- Land design
- Geodesic work in land management
- Distant land probing
- Automated Land Information Systems
- Aerospace survey systems
- Criminalistics and Criminology
- Civil and Tax Law
- Family and Inheritance Law
- Administrative Law and Procedure
- Notary service board in Ukraine

Affiliate of scientific library of ESI of veterinary medicine and livestock products quality and safety. The total book collection of the affiliate is 48900 items (books, periodicals, instructions to laboratory and practical works).

Visitors can use lending library of academic literature, reading room for 100 seats, free Internet and Wi-Fi access.

- The department has academic and scientific literature in:
- Anatomy, histology, cytology of animals
- Physiology and Pathological Physiology of animals
- Veterinary Sanitation and Hygiene of animals
- Veterinary Microbiology, Virology and Immunology

- Internal non-contagious animal diseases and Clinical Diagnostics
- Epizootology, parasitology of animals
- Surgery, ophthalmology and orthopedics of animals
- Veterinary Obstetrics and Gynecology
- Feeding, animal breeding
- Veterinary-sanitary examination
- Foodstuff Safety
- Standardization, certification, metrology.

1.11. Educational, cultural, sport and social activity

Educational activity remains an important component of the educational process at the university. It was discussed at meetings of the Academic Council and the university administration, where important and necessary decisions were made. Due to this thing an integrated system of education has developed that involves a lot of educational events.

The purpose of NULES students' education is to gain social experience by young generation, inherit spiritual heritage of the Ukrainian people, to achieve high culture of international relations, to develop spirituality, physical perfection, intellectual, moral, art and aesthetic, legal, political, labor and environmental culture.

Educational work with students of NULES of Ukraine involves the following areas of education: intellectual education, moral, civil, national and patriotic, legal, labor, art and aesthetic, environmental, and physical education.

A lecturer from each college was appointed to perform functions of an educator in a students' hostel with the purpose to organize educational process, keep discipline and order in hostels.

Educators conduct lectures, trainings, seminars, individual work about healthy lifestyles and prevention of antisocial phenomena, the best room contests, sports competitions, organize wall newspapers edition among students living in hostels.

Tutors of academic groups and students organizations of the colleges do educational work in colleges. Tutor's performance is regulated by "The Regulations about a tutor of an academic group (or course)."

Educational Scientific Center of cultural, educational and social work operates with the aim to support all legal initiatives of university students, to create conditions for young generation to gain social experience, inherit spiritual heritage of the Ukrainian people, regardless ethnicity, form personal traits of citizen of Ukraine and form developed personality, create conditions for the realization of creative potential of student personality, develop his skills and talents, provide appropriate conditions for accommodation in student hostels.

Center comprises of the department of educational and Student activity, department of social support, campus, Passport office, department of culturology, department of physical education, SS NULES of Ukraine "Sanatorium-dispensary", educational and cultural center, sports camp "Academic", students recreation centers of NULES of Ukraine, sports centers of SS NULES of Ukraine, cultural centers of SS NULES of Ukraine, Museum of NULES of Ukraine history.

Department of educational and student activity organizes and coordinates the educational work of the University, provides consultative and methodological assistance to students in their rights protection, develops and implements the incentive system of the best students of NULES of Ukraine, community activists, members of amateur groups and leading sportsmen of the university.

The Regulations on Academic Ranking of students of NULES of Ukraine was developed by the department of educational and student activity to identify the common

approaches for all collages and institutes of the university as to the use of rating system of assessment of academic, scientific, social, sport, art and other achievements of students. Also there was created student's directory which includes the most important information about the structure of the university academic and educational process and specific legal issues about rights and responsibilities of students.

Mass events, amateur performances, meetings with war veterans, theme parties, sport competitions, discos occur at the university during the academic year. In general, cultural and educational activity is implemented through the following measures: organization and preparation of theme parties with students, cultural and educational meetings of students with the intellectuals, visiting Kyiv theaters, concerts, participation in creative contests and competitions organized at the colleges, university and beyond it.

A lot of amateur groups and clubs operate in the university. Their work is coordinated by the department of cultorology.

They are:

- Folk Music and Dance "Kolos" (choir, dance group, ensemble of folk instruments);
- National Student Theatre "Berezil'"
- Academic studio of solo singing, group of bandura players;
- Academic Choir, Vocal Ensemble "Vodohray";
- Choreographic ensemble "Divoche suzirria";
- Studio of pop solo singing, vocal ensemble "Octava"
- Ballroom Dance Club "Charivnist'";
- Vocal and instrumental band "Octava";
- Music chamber "Zolota lira";
- Media studio "Ideal";
- Art Studio "Holosiivska palitra", "Decoratyvna florystyka"
- Theatre "Melpomena".
- Group "Decorative Floristic";
- Press studio "Ideal";
- Research group - cultural club "Our regions."

All events organized by the department of Culturology in collaboration with other structural subdivisions of NULES of Ukraine, allow teachers to conduct purposeful correction of education, erudition, cultural behavior of students on public, providing high level of individual education of young people.

The university has such sports facilities: football stadium with athletic racing tracks and stands for 5,000 seats ; sports building with 5 gyms (games gym, karate gym, weightlifting gym, fitness gym, wrestling gym), outdoor playgrounds for basketball, handball, mini-football on artificial turf, tennis courts.

Sports buildings of the University borders on Golosievo park named after M.T. Ryl's'kyi and Golosievo forest which is the great place for cross jogging, sports orienteering, sports direction finding, skiing, and tourism.

Coordinates the work of sports clubs department of physical education.The university students are engaged in 16 sports sections:

- football;
- mini-football
- basketball (women and men);
- athletics;
- Kyokushinkai karate;
- ski racing;
- volleyball(women and men);
- sport orienteering;

- dance aerobics;
- table tennis;
- power lifting;
- weight lifting;
- sports direction finding;
- Free and Greek and Rome wrestling.

Classes in sports training departments are conducted by the teachers of the department of physical education who have coach qualifications in particular kinds of sports or academic titles.

According to the "Regulations on mass and sports activities in the university" different sport competitions are annually held:

- university sports contests between combined teams of students of ESI;
- university sports contests between combined teams of students of colleges;
- sports contest "Health" between university teaching staff;
- sports contests between students living in hostels.

University combined teams participate in city and all Ukrainian competitions. The university best sportsmen are sent to the international competitions.

By December 30, 2012 the department of physical education trained: 4 - Honored Masters of Sports, 21 - masters of sports of international level, 110 - masters of sports, 240 - Candidate of Masters of Sports, 1162 – sportsmen of 1st category.

The department of social support helps students. Its main tasks are:

- Organization of students health improvement;
- Accounting and organization of work on paying compensation to the students the victims of the Chernobyl accident;
- Monitoring of financial provision of appropriate allowances to orphan students and children deprived of parental care;
- Formation of the draft orders and materials as to passing orphan students and children deprived of parental care to full social security.

At the university there are the necessary conditions for students' sanitation and rest.

Separate subdivision "Sanatorium-dispensary" operates the all year round to treat and make students healthier. The main task is health improvement, disease prevention, healthy way of life - a combination of study, work and leisure. Sanatorium has a medical practice in the following specialities:

- Therapy;
- Physiotherapy;
- Preventive dentistry.

Dispensary canteen, which is located in separate building, offers diet meals.

University students have the opportunity to spend summer vacations on the Black Sea coast in the sports camp "Academic", in family recreation centre "Wave" and recreation centre of separate subdivision of NULES of Ukraine "Prybrezhnenskyi Agricultural College."

1.12. Reserve Officers Training

Reserve officers training is provided by the department of military training of National University of Life and Environmental Sciences of Ukraine.

The department of military training of NULES of Ukraine was created in 1926, when the post of a military leader appeared in the Kiev State Veterinary and Zootechnical Institute by the order of the Military educational institutions № 33111 dated 11.05.1926.

Since 1999 head of the department of military training is colonel A. A. Esaulov.

Currently, the Department of Military Training trains students in six military specialties:

- Military use of mechanized formations and units;
- Military use of armoured units, military units;
- Use of vehicle formations and units;
- Maintenance and repair of machines of armoured vehicles;
- Maintenance and repair of electrical and special equipment and automation of armoured vehicles;
- Radiology and veterinary toxicology.

Regular officers in speciality “Veterinary support of subdivisions, military units, formations” are also trained by the department.

Now the department of military training trains 850 students from various Kyiv and Ukraine universities and 25 cadets.

The main tasks of the department of military training of NULES of Ukraine are:

- training, retraining and advanced training of specialists of different educational and qualification levels for military service under the contract of Armed Forces of Ukraine and other military formations;
- military training of students of higher educational establishments according to the reserve officers program;
- military patriotic education;
- training of teaching staff;
- improvement of teaching and material resources.

The Department of Military Training has highly qualified specialists, among them there are veterans.

To reach the objectives the department conducts training and methodical work, as well as research and scientific and technological activity. The training process is done in the form of lectures, laboratory, tactical, practical classes and seminars, group exercises, tactical training, etc.

Teaching and methodical meetings, scientific conferences and seminars, demonstrations and open classes, pedagogical experiments, etc are regularly held.

Department of Military Training has a strong educational facilities, including shooting range; computer lab equipped with modern teaching aids (interactive whiteboards, multimedia systems); rooms for tactical, fire and technical training; maintenance station, field veterinary laboratory; library; marching parade.

Weapons and military equipment are widely used for training of students and cadets. These are armored vehicles (tanks T-64B, BMP-1, BMP-2, BTR-80), automotive vehicles (UAZ-3151-01, ZIL-130 GAZ- 66, ZIL-131), engineering equipment (mine detectors, training mines), communication means (radios 105m P-and R-123M, tank intercom R-124), battle and training hand firearms. (AK-74M, Machine Guns RPK-74M, PKM and PKT grenade launchers AGS-17 and RPG-7V, pistols PM, SVD sniper rifles, small-caliber rifles and pistols).

Training of students at the department of military training lasts 2 years and finishes with training session. During the training session students are engaged in physical training, get practical skills in driving tanks and infantry fighting vehicles, repair and maintenance of armored vehicles and do the course of firing with hand firearms.

All necessary conditions for the achievement of set tasks have been created at the department of military training of NULES of Ukraine.

In 2012 430 reserve officers graduated from.

Now the department trains:

- First year of study - 644 students.
- Second year of study - 429 students.

1.13. International cooperation

National University of Life and Environmental Sciences of Ukraine has been engaged in international activities since 1950.

During this period more than 3000 foreign students from 89 countries have graduated with master degrees in various fields of agriculture, forestry, fishery and veterinary medicine at NULES (Ukraine). More than 500 of them continued their education as postgraduates and doctoral students and have obtained scientific degrees of doctors and PhDs.

For a significant contribution into the international recognition of education system of NULES of Ukraine 36 professors of partners universities received the title of "Honorary Doctor of NULES of Ukraine " and 57 - title "Honorary Professor of NULES of Ukraine."

Fruitful cooperation with world leading universities contributed to the reform of the NULESU education system adapting it to market economy and world universities requirements. Two U.S. universities (Iowa -1996 and Louisiana -1998), the University of Ghent (Belgium, 2002) and Humboldt University (Germany, 2002) recognized educational system of NULES of Ukraine as the one that complies with their requirements. Within the period from 2005 to 2008, NULESU signed Memoranda of double diploma with universities: the University of Wageningen (Netherlands) in the field of environmental sciences, bio-economy, biotechnology; Humboldt University - Master's program for process control and quality management; Tokyo University of Agriculture - program for international biobusiness; University of Applied Sciences Weihenstephan (Germany) - the MBA program and the University of Applied Sciences Anhalt (Germany) - MFA and MBA programs. In 2012 NULESU signed Memoranda of double diploma with Russian State agricultural university (MAA named after K. A. Timiriazev) and Warsaw University of life sciences, Poland.

Iowa State University, NULES of Ukraine and Humboldt University (Germany) initiated the foundation of GCHERA (Global Consortium of Higher Agricultural Education and Research) at the international conference devoted to the 100th anniversary of NAU (now NULES of Ukraine) in 1998. The main task of the consortium is to reform the world system of higher education and science on the base of the latest achievements of fundamental and applied sciences and information technologies, and their adaptation to the appropriate economic, national and religious peculiarities of the regions.

Rector of NULESU, Academician D. Melnychuk, who was the President of the Consortium from 2001 to 2003, is currently a member of the Executive Committee and Honorary President of the Consortium.

The seventh world conference "Increase of the strategic role of agricultural and life sciences universities, as driving force of sustainable rural development at the local level, in areas around the world, and in contribution to global initiatives achievement" was held in 2011 the Polytechnic Institute of LaSalle Beauvais (France).

The eighth world conference "Bioresources of the planet and biosafety of the Environment: issues and prospects" will be held on 4-6 November 2013 at the National University of Life and Environmental Sciences of Ukraine.

For significant contributions to the development of cooperation between universities the rector of the National University of Life and Environmental Sciences of Ukraine Dmytro O. Melnychuk was awarded with such titles: Honorary Professor of Iowa State University (USA), Honorary Doctor of the Humboldt University (Germany) and Honorary Doctor of Ghent University (Belgium), Honorary Doctor of the Russian State Agrarian University - Moscow Agricultural Academy named after. KA Tymiriazev, Honorary Senator of Louisiana (USA), visiting professor of Tokyo University of Agriculture (Japan), Honorary Professor of Warsaw University of Life Sciences, Honorary Doctor Lublin University of natural sciences (Poland).

At present, NULESU maintains international contacts and cooperation with about 90 universities and research institutions around the world, including: 54 - in Europe, 18 - in America (15 - in the USA), 16 - in Asia.

Major international programs and projects NULES of Ukraine participates in:

- Project TEMPUS, Curriculum in speciality "Environment protection" in agricultural universities - ENAGRA;
- Framework Programme of the European Union FP-7, «BIO CIRCLE 2"
- Framework Programme of the European Union FP-7, Marie Curie International Research Staff Exchange Scheme (IRSES), «GESAPU - GIS technology, space and time approaches and provision of full accounting of carbon to improve the accuracy of greenhouse gas inventory";
- Global Fire Monitoring Center UN, ECE UN, UN ISDR, OSCE, Council of Europe, "Reduction of the risk of catastrophic forest fires in the Chernobyl zone";
- The "IAEA" project, "Radiology Rehabilitation support of the areas affected by the Chernobyl nuclear power station accident";
- Global Fire Monitoring Center (GFMC), «Improvement of forests protection from fires in Eastern Europe within the team of specialists in forest fires of UN Europe Economic Commission";
- National Institute of Forestry of Japan, Utsunomiya University, "Aid in liquidation of the consequences of the accident at Fukushima nuclear power station, Japan";
- NATO Project "Nanostructured materials for catalytic neutralization of chemical combat agents";
- The "Dnipro" programme , the development of immune aptasensor to identify patulin in foodstuffs (MIMAPPA), EGIDE.

One of the priorities of the development of international cooperation is to promote training of student of NULES of Ukraine in international master programs with the possibility to obtain double diploma of NULES of Ukraine and foreign partner university. Master students of the following programmes:

• Masters of Business Administration in Agriculture (MBA) obtain the diploma of Master of NULES of Ukraine and the Weihenstephan University of Applied Sciences, Germany;

• Master of Food and Agribusiness (MFA) - Anhalt University of Applied Sciences, Germany;

• Master's Programme "Environment protection", "Bioeconomy" and "Biotechnology" - Wageningen University, The Netherlands;

• Master's program with a double diploma "Process and quality management " Humboldt University, Berlin (Germany);

• The "International Bio-Business" programme - Tokyo University of Agriculture (Japan).

NULES of Ukraine cooperates with such foreign companies as "John Deer" (USA), "Valtra Valmet" (Finland), "M & P Farma» (Switzerland), AGCO (Denmark), "Alfa Laval Agri in Ukraine» (Sweden), etc.

Some collaboration programs were sponsored by the families of Ukrainian diaspora in the United States: S. Dvoyak, A. Voskobiinyk, B. Lehman, V. Golovatyi, M. Yatsyk.

Every year about 300 teaching staff and researchers of NULESU take part in international conferences, symposia, seminars, workshops. Some scientists are invited to give lectures by partner universities. Cultural students and teachers exchange programs with Belgian, German, Polish and USA universities were organized. Every year the University holds more than 50 international conferences, seminars and workshops. About 100 undergraduate and graduate students of NULES of Ukraine obtain training at leading universities in the U.S. and Western Europe.

NULES of Ukraine is visited by the official delegations from the USA, Canada, Germany, France, Denmark, the Netherlands, Ireland, Italy, China, UK, Iran, Poland, Lithuania and Sweden. Representatives from partner universities give lectures to students of NULES of Ukraine.

NULESU actively collaborates with the following international organizations:

- Association of European Universities of Life Sciences (ICA), (www.ica-europe.info)
- Global Consortium of Higher Education and Research for Agriculture (GCHERA), (http://www.gchera.nauu.kiev.ua/);
- Food and Agriculture Organization (FAO), United Nations, (http://www.fao.org/);
- National Commission of Ukraine for UNESCO "Man and Biosphere", (http://www.nas.gov.ua/Activity/QuestionsProtectionNature/Pages/022.asp);
- European Association EUROSCIENCE (http://www.euroscience.org/);
- European Association of Veterinary Anatomists EAVA, (http://www.eava.eu);
- Federation of Veterinarians of Europe (FVE). (Http://www.fve.org/);
- World Association of Veterinary Anatomists WAVA, (http://www.wava-amav.org/);
- International Council for Scientific and Technical Cooperation in the research of aquatic biological resources and aquaculture;
- International Union of Forest Research Organizations IUFRO, (http://www.iufro.org/);
- International Association "The Pesticide Stewardship Alliance", (http://tpsalliance.org/);
- International Fertilizer Society, (http://www.fertiliser-society.org);
- SAE International (The Engineering Society For Advancing Mobility Land Sea Air and Space), (http://www.sae.org/about/);
- International Council of MBA in Agribusiness, Germany;
- International Association "Friendship without borders";
- World Association of Historians of Veterinary Medicine WAIVM;
- International Commission of the Red Book of Ukraine.

1.14. Student Self-Governing

There is a student organization at National University of Life and Environmental Sciences of Ukraine. It is the core of student self-governing. The student organization of NULESU is a school leadership, a form of youth self-education and training of future leaders.

The organization is independent from political, religious or civic organizations influence. It was created by students to protect and represent their rights, to organize students' leisure and recreation, to foster the quality of education at the university, to help students realize their capabilities and engage them in social activities. The student organization includes self-governing bodies of the basic institution of NULESU (Kyiv), 13 regional universities (subdivisions of NULESU, student organizations of 19 faculties, 11 student hostel councils, which are united into the joint committee of student hostel councils and clubs.

The student organization includes the following clubs and recreation centers:

- Club of Experts of NULES
- Scientific Club
- Travel Club
- Media Center "FOCUS"
- Sport Club
- Social Center

Student Organization cooperates with many national and international organizations and institutions, student councils from other universities, finds new prospects, undertakes joint actions and implements projects.

A specialized unit - University Guard - has been organized in order to improve the struggle against crime and administrative offenses at NULESU and its subdivisions.

The Regulation on imposing disciplinary penalties on residents of hostels – violators of internal accommodation rules at university hostels was worked out and approved by the organization.

In order to prevent delinquency among students, "The Rules of behavior for students of National University of Life and Environmental Sciences of Ukraine" were worked out.

1.15. Areas of graduates' employment

According to government regulations of Ukraine, graduates of environmental, biological, technical, agricultural specialties that have obtained a qualification level **Bachelor** can occupy the following positions: technicians, engineers, foresters, forest engineers, economists, accountants, agronomists, veterinary doctors or specialists in the fields of agriculture, forestry and fishery, veterinary services, processing industry, power engineering, technical services, mechanical engineering, public administration, commerce etc.

Graduates of the National University of Life and Environmental Sciences of Ukraine can be employed at the agricultural enterprises of different forms of ownership, fish farms, meat and fish processing enterprises, state-owned agricultural and land inspections, environmental enterprises, central government agencies in the field of agriculture and land resources, their regional departments, state quarantine service, state nature reserves, sanctuaries, regional and district agricultural administration departments, public and private veterinary clinics of veterinary medicine, state forestry and hunting enterprises, zoological parks, institutions of nature reserve fund, public and commercial wood processing and furniture enterprises, public utility companies, landscape gardening organizations, landscape design offices, joint ventures and subsidiaries of international companies, etc.

Graduates can also continue their studies at the basic institution of the University (Kyiv) or Southern Filial NULESU «Crimean Agrotechnological University" (Simferopol, Crimea) in master program specialties within the field of training listed in Table. 1.2 or in the fields of study "Specific categories":

8.18010010 "Quality, Standardization and Certification"
8.18010018 "Administrative Management"
8.18010020 "Management of Educational Institution"
8.18010021 " Pedagogy of Higher School"

2. BACHELOR DEGREE PROGRAMS

2.1. Overview

2.2. ERI of Plant Science, Environment and Biotechnologies

- Faculty of Agrobiology

6.090101 - "Agronomy"

- Faculty of Plant Protection

6.090105 – «Plant Protection"

- Faculty of Ecology and Sustainable Development

6.040106 - "Ecology, Environment Protection and Sustainable Development"

- Faculty of Biotechnologies

6.051401 - "Biotechnology"

2.3. ERI of Livestock Science and Water Bioresources

- Faculty of Production and Processing of Animal Products

6.090102 - "Technology of production and processing of livestock products"

- Faculty of fishery

6.090201 - "Water Bioresources and Aquaculture"

2.4. ERI of Forestry, Park and Gardening Management and Landscape Architecture

- Faculty of forestry

- Faculty of garden-park management and landscape architecture

6.090103 - "Forestry, Park and Gardening Management"

6.051801 - "Woodprocessing technologies"

2.5. ERI of Veterinary Medicine, Quality and Safety of Livestock Products

- Faculty of Veterinary Medicine

6.110101 - "Veterinary Medicine"

2.6. Ukrainian ERI of Bioresources Quality and Life Safety

- Faculty of Food Technologies and Quality Management of AIC Production

6.051701 - "Food Technologies and Engineering"

2.7. Technical ERI

- Faculty of Agrobiosystem Engineering

6.060101 - "Construction"

6.070101 - "Transport Technologies (according to the types of vehicles)"

6.100102 - "Processes, Machinery and Equipment of Agroindustrial Production"

- Faculty of engineering and designing of machinery and systems of environmental use t

6.050503 - "Machine Engineering"

2.8. ERI of Energetics and Automation

- *Faculty of Energetics and Automation*

6.100101 - "Power Engineering and Electrotechnical Systems in Agroindustrial Complex”

6.050202 - "Automation and Computer-Integrated Technologies"

6.050701 - "Electrical Engineering and Power Technologies”

2.9. ERI of Land Resources and Jurisprudence

- *Faculty of Land Management*

6.080101 - "Geodesy, Cartography and Land Management"

- *Faculty of Law*

6.030401 - " Jurisprudence "

2.10. ERI of Business

- *Faculty of Economics*

6.030504 - "Economics of Enterprise"

6.030508 - "Finance and Credit"

6.030509 - "Accounting and Audit"

- *Faculty of Agricultural Management*

6.030507 - "Marketing"

6.030601 - "Management"

2.11. Ukrainian ERI of Information and Telecommunication Support of Agroindustrial and Environment Protection Branches of Economy

- *Faculty of Computer Sciences and Economic Cybernetics*

6.050101 - "Computer Sciences"

6.030502 - "Economic Cybernetics"

2.12. ERI of Natural Sciences and the Humanities

- *Faculty of Pedagogy*

6.010106 - "Social Pedagogy"

6.020303 «Philology (translation)"

2.13. SS of NULESU "Irpin Economic College"

6.030510 – «Merchandising and Commercial Business"

2.1. Overview

In accordance with the standards of higher education in Ukraine the disciplines in the curricula of Bachelor courses are divided into the following components:

– *Regulatory disciplines – according to the cycles of training courses:*

• humanitarian and socio-economic (humanitarian - for economic specialties);

• mathematical and natural sciences (natural sciences and general economic – for economic specialties);

• professional and practical (professional - for economic specialties);

– *Elective disciplines chosen by university and students.*

The curricula determine the total number of hours and credits for each discipline (national: one credit - 54 hours, ECTS: one credit - 36.

The curricula on bachelor programs in the same field of study in the first three semesters (one and a half year) are common. Starting from the fourth semester (2nd year of study), the curricula differ by elective components according to the future master's specialty, which allows graduates of Bachelor programs to respond to changes in the labor market.

According to the Resolution of the Ministry of Education and Science of Ukraine from 09.07.2009 № 642 "On organization of studying the humanitarian disciplines chosen by students", the normative part of humanitarian and socio-economic (humanitarian - for economic specialties) cycle includes the following disciplines: the Ukrainian language (for professional purposes), history of Ukraine, history of Ukrainian culture, foreign language and philosophy. In addition, the discipline physical education is included into the curriculum (30 hours) but is not considered as a credit discipline. Annotations of these disciplines are given below.

Annotations of disciplines
Humanitarian and socio-economic cycle
(Humanitarian - for economic specialties)

The Ukrainian language (for professional purposes). The purpose of discipline is to improve language competence, professional communicative competence, knowledge of principles of practical stylistics of the Ukrainian language. The discipline focuses on summarizing and systematizing the knowledge of the Ukrainian language, developing skills for optimal language use in the professional sphere.

History of Ukraine. The discipline provides knowledge of the origin of the Ukrainian people and formation of the Ukrainian nation and statehood, strengthening national identity, political coverage of classes and social groups in Ukraine at certain stages of historical development. The course is aimed at training highly skilled specialists of AIC on the basis of humanization of higher school, integration of professional, social and humanitarian training, improving the contents of the course, using the achievements of world and national science and human values.

History of Ukrainian culture. The discipline is complex and is based on logical and methodological relationship with ethnography, archeology, history of Ukraine, philosophy, ethics, linguistics, art, religion and other sciences. The discipline provides students with knowledge of the basic trends and patterns of ethno-cultural development of the Ukrainian people from ancient times to the present, analysis and awareness of various phenomena and processes in the cultural life of Ukraine.

Foreign language (English, German, French). The discipline develops students' communicative competence, skills, abilities and knowledge of a foreign language in the process of networking with representatives of other countries on various issues related to business and the labor market in agriculture. Students learn to participate in international conferences, projects and discussions, make presentations, exchange business information (writing formal and informal letters, resumes, various types of research articles and reports). Thus, the course contributes to versatile development of students' personalities and their foreign language socialization in society.

Philosophy. The course provides students with a system of knowledge of the following parts of philosophy: ontology, epistemology (theory of cognition), social philosophy, philosophy of historical types that reveal the essence of the relationship "a human - the world" in their basic forms. The course synthesizes the knowledge obtained in professional and humanitarian disciplines in a holistic worldview - a theoretical foundation of university training.

Physical education. The discipline aims at developing physical training of young professionals and their ability to realize it in social and professional activities, and the family. The discipline fosters strengthening of students' health and developing their physical abilities to meet the future career needs.

2.2. SCIENTIFIC AND RESEARCH INSTITUTE OF PLANT SCIENCES, ECOLOGY AND BIOTECHNOLOGIES

Director – Gregory I. Demydas, Doctor of Agricultural Sciences, Professor
tel.: (044) 527-80-77, 527-80-21
Locality: educational building № 4, room 40

AGROBIOLOGY FACULTY

Dean – Igor O. Antipov, Candidate of Agriculture Sciences, Associate professor
tel.: (044) 527-82-13, E-mail: igorantipovn@rambler.ru
Locality: educational building № 4, room 39

The Faculty organizes and coordinates the educational process of bachelors in specialty:

6.090101 «Agronomy»

Departments in charge of graduate training:
Plant Growing. Tel.: (044) 527-86-26, E-mail: kalenskaya@nauu.kiev.ua
Head of department – Doctor of Agricultural Sciences, Professor, S. M. Kalenska

Agriculture and Herbology
Tel.: (044) 527-82-14, E-mail: agriculture_chair@twin.nauu.kiev.ua
Head of department – Doctor of Agricultural Sciences, Professor, S. P. Tanchyk

Technologies of Storage, Processing and Standardization of Plant Production named after Professor B. V. Lesyk.
Tel.: (044) 527-86-66, E-mail: save_tech_chair@nauu.kiev.ua
Head of department – Candidate of Agricultural Sciences, Professor G. I. Podpriatov

Forage production and Melioration
Tel: (044) 527-85-15, E-mail: korm60@ukr.net
Head of department – Doctor of Agricultural Sciences, Professor G. I. Demydas.

Breeding and Genetics
Tel.: (044) 527-86-26, E-mail: Parii@i.ua
Head of department – Candidate of Biological Sciences, Associate professor M. F. Pariy

Agricultural Chemistry and Agricultural Production Quality named after O. I. Dushechkin
Tel.: (044) 527-88-17, E-mail:quality_chair@mail.ru
Head of department – Doctor of Agricultural Sciences, Professor A. V. Bykin

Soil Science and Soil Protection named after Professor V. I. Shykula
Tel.: (044) 527-81-02, E-mail: grunt_nubip@ukr.net
Head of department – Doctor of Agricultural Sciences, Professor A. D. Balaev.

Vegetable Growing
Tel.: (044) 527-81-69, E-mail: NNI_roslyny@nauu.kiev.ua
Head of department – Doctor of Agricultural Sciences, Professor Z. D. Sych

Gardening named after Professor V. L. Symyrenko
Tel.: (044) 527-85-59 E-mail: garden_chair@nauu.kiev.ua
Head of department – Candidate of Agricultural Sciences, Associate professor B. M. Mazur

Soil under Cover
Tel.: (044) 527-80-67 E-mail: hothouse_chair@twin.nauu.kiev.ua
Head of department – Doctor of Ecological Sciences, Professor O. V. Prylipko

FACULTY OF PLANT PROTECTION

Dean – Candidate of Agricultural Sciences, Associate professor Oksana S. Sykalo
Tel.: (044) 527-85-77, E-mail: dekanat_FZR@bigmir.net

The faculty organizes and coordinates the educational process of bachelors in specialty:

6.090105 «Plant Protection»

Departments in charge of graduate training:
Department of Entomology named after Prof. M.P. Dyadechko
Tel.: (044) 527-89-78, E-mail: entomologia@yandex.ua
Head of the department – Doctor of biological sciences, Academician of NAAN of Ukraine Vitaliy P. Fedorenko

Department of Phytopathology named after Academician V.F. Peresypkin
Tel.: (044) 527-82-11, E-mail: phytopath_Peresupkin@ukr.net
Head of the department – Alexei F. Antonenko, Doctor of Agricultural Sciences, Professor

Department of Integrated Pest Management and Plant Quarantine
Tel.: 527-82-12, E-mail: kaf.izkr@yandex.ru
Head of the department – Vladimir M. Zherebko, Doctor of Agricultural Sciences, Professor

FACULTY OF ECOLOGY AND SUSTAINABLE DEVELOPMENT

Acting Dean – Candidate of pedagogic sciences Rybalko Iuliia Volodymyrivna
Tel.: (044) 527-80-89, E-mail: eco_dep@mail.ru
Location: academic building № 17, off. 221

The faculty organizes and coordinates the educational process of bachelors in specialty:

6.040106 «Ecology, environment protection and sustainable development»

Chairs:
Agrarian sphere ecology and ecological control chair
Tel.: (044) 527-81-95, E-mail: eco_dep@mail.ru
Head of Chair – Chaika V. M., Doctor of Agriculture Science, Professor

General ecology and emergency management chair
Tel. : (044) 527-87-65, E-mail: general_ecology@ukr.net
Head of Chair – Gaichenko V. A., Doctor of Biological Sciences, Professor

Botanic Chair
Tel. : (044) 527-82-08, E-mail: eco_dep@mail.ru
Head of Chair – Iakubenko B. Ie., Doctor of Biological Sciences, Professor

Landscape ecology and reserve managements and studies chair
Tel.: (044) 406-08-13, E-mail: bkeipr@mail.ru
Head of Chair – Kropyvko S. V., PhD in Technical Sciences, Assistant Professor

FACULTY OF BIOTECHNOLOGY

Dean – Ph.D in biotechnology, Associate Professor Julyja V. Kolomiets
Tel.: (044) 527-89-67, E-mail: Kolomiets@nubip.edu.ua
Location: educational building № 4, office 41a

The faculty organizes and coordinates the educational process of bachelors in specialty:

6.051401 «Biotechnology»

Producing departments:
Ecobiotechnologies and biodiversity
Tel.: (044) 527-85-17, E-mail: maksym@nubip.edu.ua
Head of department – Doctor of Sciences, Professor, Academician of the NAAS of Ukraine Maksym D. Melnychuk

Bachelor
in specialty "AGRONOMY"
field of knowledge "Agriculture and forestry"

Training form, licensed amount:	
– full-time study	300 people
– training by correspondence	350 people
training period	4 years
Credits	240 ECTS
Language of training	English, Ukrainian
Qualification of graduates	Technologist of Agronomy

The concept of training

Education Of bachelors from direction is aimed at training professionals able to use adaptive technology for growing crops, to ensure their economic, energy, economic and environmental efficiency, seed organizing work, agrochemical conduct of modern technological processes in the plant, take measures of rational use and restoration of soil fertility.

Practical training

Practical training is an integral part of the educational process of training of specialists as "Agriculture". Students receive practical training in educational research farms of NUBiP Ukraine, the use of which is 33073 ha: NUBiP Ukraine "Agronomic Research Station," "Velykosnitynske educational and research farm named after O.V. Muzychenko," and "Educational and research farm "Vorzel" as well as leading agricultural enterprises of different ownership.

Proposed Topics for Bachelor theses

1. The analysis of crop production and crop technology of growing in the conditions the economy.
2. Modeling of quality of crop production, taking into account soil properties.
3. Technology of breeding process and the economic and biological characteristics of the varieties samples of the culture.
4. Study of individual elements of technologies of vegetable crops growing for obtaining high yields and environmentally safe products.
5. Capacity varieties of and characteristics of growth processes in fruit (berry) crop grown under certain conditions.
6. The influence of norms and the timing of fertilizers on the yield and quality of crops.

Academic rights of Bachelors can continue their studies in the Master Program in specialties features of which are placed in the curricula of bachelor programs, beginning with the second or third courses:

8.09010101 «Agronomy »
8.09010102 « Agricultural Chemistry and Soil Science »
8.09010104 « Horticulture and viticulture »
8.09010105 «Breeding and genetics of crops»
or the field of knowledge 1801"Specific categories":
8.18010010 – « Quality, standardization and certification »
8.18010018– "Administrative Management"
8.18010020 – "Management of the institution"
8.18010021 – "Pedagogy of high school»

Spheres of Bachelors employment

Place of employment of bachelors include: agricultural enterprises of different ownership, public health centers of quality of soil fertility and of crop production; Ukrainian State pomology inspection, Ukrainian State Seed Inspection, the State Committee for Land Resources, with its vertical in regions and districts, state security service soil.

Bachelors Program and Curriculum in specialty "Agronomy"

№	The name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training*					
1	Ukrainian language (for professional purposes)	1	108	2,0	3,0
2	History of Ukraine	1	108	2,0	3,0
3	The history of Ukrainian culture	1	72	1,3	2,0
4	Foreign Language	1-2	180	3,3	5,0
5	philosophy	2	108	2,0	3,0
6	Physical training **	1-4	216	4,0	6,0
7	Politology	2	72	1,3	2,0
Total for the cycle			*864*	*16,0*	*24,0*
1.2. Cycle of mathematical and natural science (fundamental) training*					
1	botany	1-2	144	2,7	4,0
2	Higher Mathematics (special focus)	1	72	1,3	2,0
3	Physics the basics of Biophysics	1	72	1,3	2,0
4	Chemistry (including inorganic chemistry	1	108	2,0	3,0
	analytical chemistry	2	72	1,3	2,0
	organic Chemistry	2	108	2,0	3,0
	physical and Colloid Chemistry	3	108	2,0	3,0
5	Ecology (special focus)	2	72	1,3	2,0
6	radiobiology	4	72	1,3	2,0
7	genetics	4	108	2,0	3,0
8	plant physiology	3	144	2,7	4,0
9	Information Technology	1	72	1,3	2,0
Total for the cycle			***1152***	***21,3***	***32***
1.3. Cycle of professional and practical training *					
1	Economics and	7	90	1,7	2,5
	business, management	8	90	1,7	2,5
2	Stockbreeding	2	72	1,3	2,0
3	Agrometeorology	2	72	1,3	2,0
4	Soil Science with the bases of geology	3-4	180	3,3	5,0
5	Ahrofarmacology	4	108	2,0	3,0
6	entomology	5	126	2,3	3,5
7	Phytopathology	6	126	2,3	3,5
8	Basic research in agronomy	6	72	1,3	2,0
9	Standardization and quality control of crop production	3	108	2,0	3,0
10	Mechanization, electrification and automation of agricultural production (including tractors and cars)	1	72	1,3	2,0
	agricultural machinery	4	90	1,7	2,5
		2	72	1,3	2,0
11	Farming	5-6	180	3,3	5,0
12	Herbology	6	126	2,3	3,5
13	Agrochemicals	5	162	3,0	4,5
14	fruit-growing	5-6	162	3,0	4,5
15	vegetable growing	5	162	3,0	4,5
16	Plant Growing	6-7	234	4,3	6,5
17	Grassland and onion production	7	126	2,3	3,5
18	Breeding and Seed Production of Agricultural crops	7	126	2,3	3,5
19	Technology of storage and processing of of crop production	7-8	144	2,7	4,0
20	seeding	8	72	1,3	2,0
21	Basics of labor protection	3	90	1,7	2,5
Total for the cycle			**2862**	**53,0**	**79,5**
Regulatory part, total			**4878**	**90,3**	**136**

2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of humanitarian, social and economic training*					
1	Jurisprudence	8	90	1,7	2,5
2.1.2. Cycle of mathematical and natural science (fundamental) training*					
1	Latin language	2	90	1,7	2,5
2	Agricultural virology	4	108	2,0	3,0
3	Agricultural microbiology	4	126	2,3	3,5
4	Biotechnology	4	144	2,7	4,0
2.1.3. Cycle of professional and practical training *					
1	Plant Growing in greenhouses	4	144	2,7	4,0
2	Fundamentals of commodity of crop production	4	126	2,3	3,5
3	Programming of yields	8	108	2,0	3,0
4	Agricultural melioration	8	108	2,0	3,0
5	Industrial crops	8	144	2,7	4,0
Chosen by university, total			**1188**	**22,0**	**33,0**
2.2. Disciplines chosen by students					
2.2.1. Cycle of mathematical and natural-scientific training *					
1	Biological plant protection	8	108	2,0	3,0
2	Geology with the basics of mineralogy	4	108	2,0	3,0
3	Biochemistry	8	108	2,0	3,0
4	geochemistry	8	108	2,0	3,0
5	Distance sensing of the Earth	8	108	2,0	3,0
2.2.2. Cycle of professional and practical training *					
1	Quality management of crop production	5	108	2,0	3,0
2	Nursery	5	108	2,0	3,0
3	Cartography of soil	5	108	2,0	3,0
4	Special genetics field crops	5	108	2,0	3,0
5	viticulture	7-8	144	2,7	4,0
6	Special breeding and crop variaties scirence	7-8	144	2,7	4,0
7	Seed crops	8	108	2,0	3,0
8	vegetable growing in greenhouses	8	108	2,0	3,0
9	Pomolohiya	8	108	2,0	3,0
10	Growing of vegetables in the open ground	8	108	2,0	3,0
11	Ornamental Horticulture	8	108	2,0	3,0
12	Breeding of vegetables, fruits and berry crops	8	108	2,0	3,0
13	The system of fertilizer application	8	108	2,0	3,0
14	Methods of agrochemical research	8	108	2,0	3,0
15	Soil protection	8	108	2,0	3,0
16	Geographers of soils	4	108	2,0	3,0
Chosen by students, total			**900**	**16,7**	**25,0**
Elective part, total			**2088**	**38,7**	**58,0**
Practical training			**936**	**17,3**	**26,0**
Degree examination *			**162**	**3,0**	**4,5**
Total, according to the field of study			**8640**	**160**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.

**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Annotations of disciplines "Ukrainian language (for professional purposes)," "History of Ukraine", "The history of Ukrainian culture", "Foreign Language", "Philosophy", "Physical Education" see. Section 2.1.

Politology. The goal of teaching is to develop students' logical system completed a basic knowledge of policies and adequate skills as the basis for the formation of their political consciousness and political culture. The objective of discipline is to acquaint students with the essence, the genesis of the formation and development of political science as a science and discipline, its main issues and current status of their resolution, the essence of political life, political relations and processes of constitutional human and civil rights, the place and importance of political systems and modes of life of the state and the individual, the main trends of the global political process, geopolitical situation, place, role and status of Ukraine in the world.

1.2. Cycle of mathematical and natural science (fundamental) training

Botany. The aim of the course is learning patterns of plants and vegetation as an essential component of bioenergy biosphere. As a result, the study of botany student has to learn self-study method with a microscope, the self-production of medicines and analysis of the cellular and tissue level and at the level of individual organs and the whole organism, which is of great cognitive and practical importance. Therefore, the importance given to the organization and conduct summer field practical training during which students independently collect and plants, conduct research geobotanical certain types of vegetation, which is the final stage of study and analysis of the current state of vegetation, studied ways to improve forecasting of natural plant communities. The aim of the course is also a botany student mastery of botanical knowledge, botanical terminology necessary for conscious and competent study of other related disciplines that form the professional agricultural training profile.

Higher mathematics (professional orientation). During the course the student formulates a simple application problems and create mathematical models of real objects and processes that are occurring, developing rational methods generated models, conducts their qualitative and quantitative research (is a model of optimization problem and find its solution methods mathematical analysis, differential equation is a process or phenomenon and unleashes it) handles numerical data obtained in the laboratory, field, agrochemical methods of mathematical experiments, analyze the findings, study skills is a range of tasks related to professional orientation, able to formalize and classify them, to carry out analysis of results.

Physic with basis of biophysics. The course which is studied in the ecological higher schools takes into account the specificity of the agricultural plants, their main physical characteristics and properties, and the effects of environmental conditions on these plants. The student must know the main physical laws which consist the basis of viability of agricultural plants, the mechanisms of interaction of plants with the surrounding, the principles of action of modern physical and biophysical equipment which can be used in plant – growing and vegetable-growing, and apply the knowledge to special disciplines studying and practical activity.

Inorganic chemistry. The program includes the theoretical foundations of contemporary inorganic chemistry and data about features of bio-elements such as hydrogen, halogens, oxygen, sulphur, nitrogen, phosphorus, carbon, lead, aluminium, alkaline and alkaline-earth metals, manganese, iron, copper, zinc, silver, cadmium, chromium. Chemical processes with these elements and its compounds are shown on the points of view theory of electrolytic dissociation, hydrolysis, redox processes and possibility of complex compound formations.

Analytical chemistry. The program includes theoretical and applied tasks of qualitative and quantitative chemical analysis. Mainly the basic requirements to chemical reagents, analytical reactions and ideas about the methods of cations, anions and substances separation and concentration are considered. The methods of acid-basic titration, redox methods, chelatometry are considered as well.

Organic chemistry. This course provides the study of the fundamental topics of organic chemistry, such as molecular structure and reactivity of organic compounds, their classification and nomenclature, physical and chemical properties. It covers the basic classes of organic compounds, including aliphatic and aromatic hydrocarbons, alcohols, aldehydes and ketones, carboxylic acids, nitrogen-containing and polyfunctional substances of both natural and man-made origin, etc. Fundamentals of biochemistry are introduced, including carbohydrates, lipids, amino acids, peptides, and nucleic acids. This course contributes to formation in students of the framework of scientific comprehending of processes that occur in nature. Among the great variety of topics, encompassed by the classical organic chemistry, the major attention is paid to those directly related to professional training of the students.

Physical and colloid chemistry. The course of physical and colloid chemistry completes the cycle of chemical disciplines, which, jointly with other natural sciences, shape the science-based materialistic vision of the students and make a basis for studying special subjects. The course includes consideration of issues, traditionally studied by physical and colloid chemistry, such as: chemical thermodynamics, kinetics, chemical equilibrium, solutions, electrochemical processes, surface phenomena and ion-exchange processes, stabilization and destruction of colloid systems, solutions of high-molecular compounds. Especial attention is paid to physic-chemical phenomena and processes, directly concerning professional training of the students, as well as physic-chemical methods of research used for study of biological objects.

Ecology (after professional direction). Actuality of its study consists in that in the process of studies students meet with basic problems which exists in agrosphere. The main aspects are studying belongs acquaintance with the harmful action of pesticides, contamination of environment, as result of mineral fertilizers application, and agricultural produce – by nitrates. The special attention is devoted the degradation processes of soils: humus damages, wind and water erosion, undepressed. Questions are also consider in relation to the alternative ways of support of agriculture, bringing of organic; fertilizers and biological protection of plants, soil protection cultivation till and general ecological situation, in agro landscapes.

Radiobiology. The course considers the principles of agricultural radiobiology and radioecology; it introduces into the problems of biological impacts of ionizing irradiation, the radionuclide migration in the Environment and in the agricultural objects, the basic concepts of the radio ecological and dissymmetric monitoring; it presents the structure of the radiation control system, the methods of assessment and normalization of the doses and permissible levels of the radioactive contamination in accordance with the norms of radiation safety of Ukraine; it analyzes in details the countermeasures for reduction of the radio nuclides transfer into agricultural production and foodstuffs, as well as the ways for the ionizing irradiation application in the agricultural practice.

Genetics. Genetics course aims familiarizing of students with principles of genetics according to modern scientific knowledge. The course consists of the following sections: basis of molecular biology, proteins, nucleic acids and chromosomes structure and functions, mechanisms of genetic information expression, genome structure, cytogenetic aspects of genes inheritance, Mendelian genetics, variability of genetic information, its causes and consequences, characters of plants propagation and basis of population genetics. The course includes listening of lectures and analyses of practical tasks concerning all theoretical sections.

Plant physiology. Discipline is one of the basic disciplines in the training of specialists in “Agronomy”. Discipline involves studying the functions of plant organism and the laws of its life. The role of the discipline is to provide future specialist deep and comprehensive knowledge of the biology of the plant cell, water regime of plant organism, mechanisms of respiration and photosynthesis, mineral nutrition, plant growth and development, adaptation and mechanisms of resistance to adverse environmental factors. Acquired knowledge of plant physiology will allow future specialists in the area of agriculture practice to implement the latest achievements of science, have scientific and professional approach to technologies in crop growing and to independently develop and adjust agronomic activities by understanding the physiological processes of plant organism.

Information technologies. In the lecture course, students are introduced to the concepts of information, its properties and use of computers, the principles of input, storage and processing of information, its purpose in the professional activity and life of mankind. The main part of the course is devoted to studying and mastering basic computer technology, which is the most widely used for processing of business information – the study and practical use of text and spreadsheet processes. The development of this technology is carried out in a problematic term, i.e. students not only learn the basics of informatics, and acquire practical skills in computer technology that allows the preparation of agronomic training on international standards.

1.3. Cycle of professional and practical training

Economics, business and management. A course foresees the study economics of the system of agrarian relations of productions in intercommunication with development of productive forces of agriculture. Criteria and indexes, which characterize development of agricultural production, ways and methods of the rational use of earth, financial and labours resources, are herein examined. The necessity of development and improvement of resource potential of agriculture opens up, the method of determination of economic efficiency of agricultural industries is given. The terms of forming of prime price and profitability of products of agriculture, development and functioning of market of food light up. The problems of intensive development of industries of agriculture are studied on the basis of the wide use of industrial technologies, rational placing and specialization of agricultural production on the base of agro industrial integration in the conditions of relations of markets.

Stockbreeding. The program stipulates studying a condition of the basic ways of development of animal industries at the present stage in Ukraine and the advanced countries of the world, biological bases of cultivation and feeding of agricultural animals, and also "know-how" production animal industries in conditions of an intensification of an agricultural production in economy of different patterns of ownership, finding of habits of an estimation of the ex-terrier, the constitution of animal different kinds of productivity, and also definition of norms of feeding and drawing up of diets for separate kinds of agricultural animals.

Agricultural meteorology. Subject program provides for main issues of agricultural meteorology, influence of weather and climate changes on agricultural production objects. They are analyzed dangerous for agriculture weather phenomena, and methods of their controlling.

Soil Science with the bases of geology. Soil science is science, which studies genesis, development, structure, composition, properties and laws of geographical distribution of soils, ways of their rational use and restoration of fertility. Knowledge of theoretical bases of soil science enables to understand and grasp problems and prospects of land use. Purpose of the course “Soil Science with the Bases of Geology " is deep cognition and study of the soil cover as environment of agricultural crops growing, and also place of existence of living organisms, study of structure and basic properties of soils, their mineralogical composition, laws of geographical distribution of soils, cognition of natural processes of soil.

Agricultural pharmacology. Contents of subject involves the study of pesticides, their production and toxicological-hygienic characteristics, of modern classifications of pesticide, regulations their application.

Entomology. The course deals with Introduction to entomology and insect-pest management, including morphology, life processes, ecology and biology of key agricultural pests. Students are provides with knowledge of tactics of population suppression, and ecological backlash and level of entomophagous efficacy. Study module "Beekeeping" required to get the students knowledge on plants honey and pollination of crops by bees. Expected learning products plants collected bees for their power and provide a marketable product. Served as melliferous plants characteristic of plants, their classification, use to create tricks in different periods of the season. Reveals the role of bees as pollinators of plants, equipment and organization pollination of various crops, effectiveness in increasing yields of fruit and seeds.

Phytopathology. Plant pathology studies phytopathology, reasons of their appearance features in development, symtomatology pathologies, species composition, morphology and bioecology of agents plant against pathogens, methods and systems of immunity, protection. On the basis of knowledges of phytopathology methods should be able determine of symptoms disease to carry out identify of pathogens and diagnose of diseases. On explicit data its need to conduct phytopathology monitoring as a results which it is differentiated to realize the prophylactic and therapeutic measures of control plant disease.

Basics of scientific research in agronomy. The lecture course on the subject covers the theoretical foundations of scientific research and its application in practice, planning and research in agronomy, the application of statistical methods in agronomic research and planning of scientific research using computer applications. Laboratory - a practical course focuses on the study of methods and algorithms for statistical analysis of experimental data: variation, variance, correlation, regression, analysis, Pearson, probit analysis.

Standardization and management of planting products quality. Discipline including study thus questions purpose and task standardization, essence of standardization as sciences, methodical bases of standardization, question of quality of products, standardization of indexes of quality of products and control methods, intergovernmental system of standardization, are represented in an executable code, international standards of ISO of series 9000, 10000 and 14000. General information is about domestic and foreign experience of quality management of products, question of certification of products and metrological providing of quality of products. compiling the content of courses taken into account the laws of Ukraine on standardization and safety of plant products.

Mechanization, electrification and automatization of agricultural production. The purpose of the study discipline - provide students theoretical knowledge and practical skills in the field of mechanization, electrification and automation of technological processes of agricultural production. Academic discipline is complex and consists of a coherent and technologically related sections: tractors and automobiles, agricultural vehicles; electrification and automation of technological processes of agricultural production.

Agriculture. From the study of this discipline students should possess scientific principles and laws of Agriculture. Students should know factors of plant life and be able to implement methods of their regulation in agriculture. The student should know indicators of soil fertility, their regulation and ways of reproduction of soil fertility; scientific principles of crop rotation, principles of their design and development; scientific principles, measures, methods and system of soil tillage; agronomic requirements for crop planting and plant protection; types of erosion and deflation of soil and measures to prevent them; features of farming in the contaminated territories; scientific bases of agriculture systems and their features in different soil-climatic zones; features of farming of industrial, ecological, organic (biological), soil-farming systems and farming systems no-till , mini-till.

Herbology. The discipline is one of the basic disciplines of professional training in agronomy. In the lecture course covers the scientific basis of herbology, the characteristic vegetation segetal place in modern agrophytocenosis and its negative impact on crop plants. Completed the course measures and control systems in the debris of modern farming systems. Laboratory course devoted to the study of weeds and the acquisition of practical skills in the development of systems of control weeds in field crops.

Agriculture chemistry. Program includes main problems of fertilization in agriculture, the effect of fertilizers upon the ecological conditions of environment, theoretical and practical questions of nutrition and fertilization of agricultural plants. In particular questions on chemical composition of plants, soil and fertilizer interaction, chemical melioration, classification and agroecological peculiarities of mineral and organic fertilizer application are considered. Questions on technologies, schemes and machines for organic and mineral fertilizer application are examined. Special attention to development of the system of fertilizers application in crop rotations is spared.

Fruit growing. The program envisages studying fruit and stall fruit plants, namely: their importance, morphological and biological peculiarities, methods of propagation, rootstocks, the structure of the nursery, technologies of growing panting trees, establishment of orchards, systems of the soil management, treatment and tillage, the orchards fertilizing and irrigation, fruit trees training and pruning and other operations in orchards, preparation for and technologies of harvesting crops, biological peculiarities and technologies of small fruit crops cultivation.

Vegetable growing. The lecture course of the discipline consist 45 hours. The topics of dialogical bases of vegetables crops, peculables of soil preparation and fertilization, plant propagation, seedlings growing, general questions of plant protection, harvesting and the principles of vegetables crops rotation tailoring are represented in it. The greenhouse vegetable have been considered widely. Under considering vegetables are shown the technology of growing for: cabbage, carrot, table beet, onion, tomato, eggplant, cucumber, head lettuce, dill, sorrel, horseradish. On laboratory-practical lessons have been studied the morphological characteristic of vegetable crops and its classification. Carry out determination of seeds type, germination test. The methods of propagation, accounting of the seedlings quantity for different crops both field and greenhouses have been studied.

Crop production. Educational course modern intensive technologies of food, industrial and other crops cultivation. Course based on knowledge about field crops, features of their growth and development, requirements to the environmental factors, up to date tools and technologies of agricultural crops cultivation which provides obtaining of high yields with appropriate quality with minimal labor and finance expenses. Course forms appropriate professional ideology, provides with system of theoretical and applied knowledge's and skills to implement it in practice.

Fodder Production and grassland science. Subject program provides for studying of scientific-grounded system of organization-managemental, biological, technological and economical measures of production, conservation and storage of fodder; studying of the system of organization measures and technological methods, aimed to increase natural forage land productivity, creation of sowed hayfields and pastures, and efficient use of them.

Breeding and seed growing of crops. The objective of discipline is to train professionals to work independently in agricultural enterprises, state farms and theoretical and practical study of breeding and seed leading agricultural cultures. Discipline involves review and consolidate the knowledge of: problems of selection and seed production under current conditions, the theoretical principles and methods of selection, selection process merits, the State qualifying examination, study basic varietal characteristics, varieties and hybrids of major agricultural cultures that are listed in the State Register of Plant Varieties of Ukraine, the organization and technology of conducting primary and certified seed, seed concepts of ecology and ecological seed, State and interfarm varietal and seed quality control and seed crops; documentation varietal crops and seed; adaptation of national seed international schemes and procedures between originators, producers and consumers of seed production. Discipline involves listening to lectures, laboratory and field studies.

Technology of storage and processing of crop production. Is special discipline that studies technology postharvest handling of cereals, legumes, groats crop, oilseeds, sugar beet, bast crops, hops, tobacco, fruits, vegetable of short and long-term of storage, bases of processing. This is finish discipline after learning technologies cereals, legumes, groats crop, industrial crops, vegetables, fruits and berries.

Seed science. Educational course consider acquirement of knowledge about theoretical and applied grounds of seeding, yielding and varietal qualities formation. Course contains learning of theoretical basis of formation, peculiarities of ontogenesis and organogenesis, dormancy of seeds and methods of this state overcoming, germination ability and energy, vigorous of seed, anatomy and morphology of seed, chemical composition, physical and mechanical properties of seed, seed respiration and damage. As a result of the course students should learn modern technologies of growing, processing and storage of high quality seeds of field crops, domestic and international legislative base of production, trade and use of seed and seeding material, methods of estimation of seeding quality of seeds, internal and state control of seed production, use and trade on all stages.

Life safety and labor protection. The theoretical foundations of life safety, basic concepts and definitions, methodological foundations of life safety, potential risk, risks, environmental risks, methods of identifying and calculating of the risks, physiological and psychological criteria's of human security, system analyzer, adaptation, reliability physiological systems of human psychology, the impact of nature and human temperament to its security thinking, communication, emotions, will, in the system of human security, the environmental protection, human pressure, air pollution, water, soil, ecological situation.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.1.1. Cycle of humanitarian, social and economic training

Law. The course aims to equip students with knowledge about the nature of law, on the basis of the constitutional order of Ukraine, basic legal provisions in such branches of law as constitutional, civil, labor, family, criminal, administrative, economic, housing, environmental and land law, and as the foundations of the judicial system, law enforcement and other areas of law, to form skills lawful behavior, the need to raise confidence in the strict observance of the rule of law. It puts the following tasks: to learn the system state legal concepts and categories of the theory of law, public law and private law areas of law.

2.1.2. Cycle of mathematical and natural science (fundamental) training

Latin language. The main objective of the course "Latin language" at the agrobiological faculty is to teach students of Latin terminology, operating in botany, plant pathology and zoology, open access to a free and conscious perception of biological nomenclature, which is an essential element in the formation of high-grade specialist agro-pro file. The course consists of 2 modules of content, including the 10 lexical and grammatical topics for classroom and independent work, which allows the ability to build practical knowledge of Latin terminology in education in agrarian high school.

Agricultural virology. Main purpose of study course is acquisition a theoretical foundations and formation of practical skills of students who will investigate plant viruses and methods of struggle of viral spread. The practical part of course includes study modern methods which can be used by a work with plant viruses, especially for viral diagnostic and identification by means of biological testing, electron microscopy and immunoassay methods also for getting a unviral landing material by microcline method of reproduction. Knowledge of above methods is necessary for training of high educational specialists in agriculture.

Agricultural microbiology. The subject give knowledge about morphology, structure, classification, genetic, physiology and ecology of basis groups of microorganisms, their role in utilization of complex plant and animal remains, breaking them down into simpler chemical forms which are returned to the soil. The importance of microorganisms in human practice activity, microorganisms interaction between themselves and high plants, give knowledge about microbiological means of protection against deseases and pests of plant, perspective means of plant protection for graving harvest agricultural crops.

Biotechnology. Discipline focuses on cultivation of isolated cells and tissues, callus and suspension cultures, microclonal propagation of plants and their recovery from viral infections, morphogenesis and regeneration of plants in vitro (organogenesis, embryogenesis, rhizogenesis), culture of isolated protoplasts as a basic of cell engineering, selection of plants in vitro, cell and genetic engineering, methods for transgenic plants obtaining.

2.1.3. Cycle of professional and practical training

Plants' growing in greenhouses. The program is devoted to greenhouse classification studying. Materials, which used in greenhouses building. Technology sprouts production, and its specific methods. The discipline include the main information about vegetables production in protected cultivation conditions.

Fundamentals of crop production commodity. The discipline that studies the technological characteristics of different types of commodity crop production, methods of preparation of parties grain various purpose, horticultural, industrial raw materials, processed grains, fruit and vegetables, formatting rules accompanying documents and methodology of consignments of crop production.

Yield forecast. Forecast and programming of yield of agricultural crops basing on principle of establishment of possible level of productivity, which is determined by the biological features of crops, quantitative influence of factors of growth and development of plants, establishment of supply level of these factors in concrete soil-climatic conditions and evaluation of necessity in resources to regulate abovementioned factors. Programming of soil fertility and crop production is directed to regulate organization of agrophytocenosis as system with the view of improvement of maximum its productivity. Population provision with crop production will to realize mainly decide to crop capacity increase, by virtue of scientific and technical progress introduction to agriculture and crop grown. Actions complex for to attention of objective point included programming course of soil fertility and crop production.

Agricultural melioration. Subject program provides for studying technologies of environment improvement by means of using hydrotechnical, agro-forest-technical, land-clearance, agro-technical, and chemical meliorations, as well as phytomelioration measures.

Industrial crops. Educational course highlights ecological and economic principles of placing of industrial crops in rotation, use, origin, location, productivity, volumes of production of industrial crops. Describes classification, morphological, anatomical and biological peculiarities of industrial crops and requirements to conditions of cultivation. Describe essence of adaptation, economy favorable, ecologically secured technology cultivation of every crop according to a zone: characterizing placing of every culture in rotation, system of fertilizer application, system of soil tillage and seeds preparation, control of weeds, diseases and pests, harvesting and primary processing of productions**.**

2.2. Disciplines chosen by students

2.2.1. Cycle of mathematical and natural science (fundamental) training

Biological protecting of plants. Discipline is profiling discipline and consists of two parts of general and special. In general part students study the diagnostic signs of different groups of organisms, which is used in biological defense of plants, their mutual relations and role in the decline of quantity of harmful objects. In the special part the questions of application of different biological facilities are studied in protecting of plants from harmful organisms, including microbiological preparations, mass breeding of insects and pliers in biolaboratories, use BAR, and also combination of biological method, with other methods of defense of plants.

Geology and basics of geomorphology. Geologic conditions determine the origin, evolution and distribution of soil cover. Rocks along with other landscape conditions, including climate and water, determine the type of soil genesis. Geology - the science that studies the composition, structure and history of the Earth and the processes that occur inside and on the surface. The main goal of “Geology and Basics of Geomorphology” course is the study of the material composition of the Earth crust, which is the mineral basis of all soils and subsoils, familiarity with the most important minerals and rocks.

Plant biochemistry. Plant biochemistry is the science that deals with chemical composition, metabolism and interchange of energy in plant organism. Importance of plant biochemistry for agronomists is based on the fact that understanding of plant metabolism

allows governing plant development. Program of the discipline includes points of composition, structure and importance of main groups of plant organic compounds, the main important points of plant metabolism and biosynthesis of the main organic compounds. It is also discussed the characteristics of biochemical composition of the main agricultural crops. The attention paid to the practical points of biochemical analysis.

Geochemistry. Geochemistry reveals the mechanisms of flow and transformation of certain chemical elements in different environments, including soils, natural waters and atmosphere, depending on existing conditions; and studies laws of biogeochemical cycling of substances in the landscapes. Knowledge of geochemistry are used in the soil survey, soil monitoring, in agrochemical research, development of methods of fertilization and melioration**.**

Remote sensing. Course includes basics of remote sensing of Earth. Possibilities of remotely sensed data in yield prognosis, canopy status and land resources monitoring are reviewed. Course foresees review of methods of remote sensing of the Earth as well as possibilities of application of the results of thematic interpretation of images for agricultural resources monitoring.

2.2.2. Cycle of professional and practical training

Management of plant products quality. The subject of Management of quality of plant products is important in formation the future specialists in the field of agrochemistry. This discipline lets students to master technological service in plant growing technologies for forming of the good quality of plant products. The students train skills in monitoring of the chemical pills and its application in technological processes for increasing of plant products quality in conditions of saving or increasing of soil fertility according to modern market conditions. The task of the course is forming of the theoretical knowledge and the practical skills in the students in the field of optimization of nutritive conditions for plants across using new agrotechnical methods and new technologies for forming high quality of plant products.

Fruits and berry nursery. Course of study «Nursery» envisages studying of nursery history, its modern condition and perspectives in Ukraine and in the world, investigation of biology fundamentals of fruits and berry plant propagation, main methods of plant material production. Studding course includes fruit nursery structure, its organization, requirements for the soil and climate conditions, the principles of nursery parts calculation. Base of course is studding of rootstocks growing, main technologies of plant material production, knowledge of modern rootstocks and plant material standards, and their storing technologies.

Soil mapping. The main purpose of the subject is research of land surface coverage of the Earth and respective regularities, as well as approaches for required calculations, providing and incorporation of the results to topographic maps. In the study process students learn the information about topography measures in nature, analyze methods, and construction and application of the soil, ecological, special maps. During the study period students produce a geomorphologic profile of a region, develop legends for the thematic maps, and carry out a map basic for further ecological research purposes.

Special crop genetics. The Special Genetics science is the genetics of individual species. It is the knowledge systematization of caryological and genomic analysis, of genetics and phylogenetics of signs, of mutagenesis, of polyploidy, of heterosis and inbreeding, of populations genetics and other issues of genetics of separate species. This Special Genetics course was designed to show to students the basic nature of the inheritance of quantitative and qualitative features of species. In this course are shown main questions from the Special Genetics of field crops that are grown in Ukraine: grain,

legumes, cereals, oil, forage, and crops for technical purposes. This course includes the general information from biology, morphology and ecology of selected crops and information about source material and areas of genetic research of this crops.

Viticulture. The aim of the discipline is set on the history and botanical classification of grapes, biology and ecology of grape plants, advanced technologies of cultivation and production of planting material and ways to improve the assortment. The issue of table wine growing and production of dried products.

Special selection and varieties learning of crops. Provides study of national economic importance, morphology, genetics, breeding characteristics, specific areas of plant breeding and seed 28 crops of Ukraine.

Seed growing field crops. Today, rather than before, the new varieties and hybrids of field crops are creating. The most complete and rapidly implementation progress of plant breeding is possible only in a well organized seed growing, the main task is reduced to accelerated seed multiplication of new zoned and maintaining genetically predisposed characteristics and properties grown in production varieties and hybrids.In the process of reproduction and production using these features and properties gradually deteriorate due to mechanical and biological contamination, the appearance of mutations, reduced resistance to disease and pests. The effectiveness of seed growing depends upon knowledge of unified technology selection and rapid production of seed varieties, peculiarities of seed growing characteristics of lines and hybrids based on cytoplasmic male sterility and fertility-based, crop varietal specific inspection and documentation of high quality seeds.

Vegetables production in greenhouses. The program is devoted to protected cultivation plants studying in different greenhouse types and its ecspluatations. Formed and established the optimum microclimate's factors and nutriens require in protected cultivation conditions are concentrated. The technology of the planting produce the main vegetable crops and mushrooms are described.

Pomology. Course studies the economic and biological properties of the fruit and berry crops and their variability depending on natural and agro-climatic conditions. The origin of varieties and their requirements to farming. Examines issues maintaining existing varieties and their subsequent improvement by clonal selection and introduction of sorts. Zoning varieties based on production-biological study in a particular region. Learning the basics of pomology allow future agriculturists, gardeners competently navigate the huge variety of varieties of fruit and berry plants. Properly chosen the best for mass propagation in nurseries and growing in industrial and amateur stands in a particular sector or natural climatic region considering the economic and biological characteristics of the varieties and their requirements for farming. Identify the use of certain varieties in breeding as donors or sources of valuable traits.

Vegetable growing in opened soil. The lecture discipline course consists of 16 hours. This discipline devoted to growing of vegetable crops in opened soil and consists of two modules. The topics of economical meaning, medicinal properties, and biological bases of vegetables crops in opened soil. The particularities of soil preparation and fertilization, plant propagation, seedlings growing, general questions of plant protection are represented in lection course. Under considering of field vegetables are shown the technology of crops harvesting. The vegetable crops growing are studies for group: cabbage (Savoy cabbage, Brussels sprout, Kohlrabi cabbage, Celery cabbage, Chinese cabbage); fruit (the watermelon-field crops, common bean, pea vegetable, broad bean, sweet corn); root (parsley, celery, radish, radish Spanish); green (leaf beet, Fennel, Garden cress, Leaf mustard); perennial (sea kale, asparagus, Japanese onion, many-tier onion, dwarf alp, chive, aromatic onion). On practically-laboratory lessons are studied the botanical and biological particularities of vegetable crops and their requirements for the growth conditions. And else the methods of control and regulation temperature light, CO_2

content, air and soil moisture. Deeply motivated selection varieties and hybrids for determined of growing technology of vegetable crops and different directions of marketing.

Decorative gardening. Course of study envisages studying of decorative gardening history, development of fundamental stales, studding of the decorative plants classification, main types and systems of gardens, their elements, methods of decorative plants propagation and also technologies of creation systems and care of the trees.

Fruits, berries and vegetables breeding. The subject matter includes two modules. The first is dedicated to breeding varieties and heterosis hybrids of vegetable crops and especially their seed and the second - the breeding of fruit crops and their rootstocks. In the first module submitted basis simulation varieties and heterotic hybrids of vegetable crops and selection processes, the doctrine of original material, the study of signs. The special attention is given to methods of selection for heat resistance, cold resistance, drought tolerance, etc. In the second part it is given the topics contemporary methods of fruit breeding – apple, pear, strawberry, raspberry, blackberry, grape and other fruit and berry. A purpose of this course is to let know for students the information on a history of horticultural genetics and selection, as well on a modern status and specificity of selection process in fruit and berry crops. The theoretical and methodical problems of creating new or improving existed varieties are given. Several methods of a selection, searching the sources of a starting material, a choice and estimation of parental forms are considered.

System of fertilizer application. The system of fertilizer application is the one of the basic studying discipline in professional training for the studying of the future specialists in agronomy field with characteristic of the specialty in agricultural chemistry and soil science. The goal of the course is to deepen theoretical knowledge and practical skills for growing high yield of crops and for improvement of quality of plant products and for recreation of soil fertility and protection of environment.

Methods of agrochemical research. Program includes main problems of fertilization in agriculture, the effect of fertilizers upon the ecological conditions of environment, theoretical and practical questions of nutrition and fertilization of agricultural plants. In particular questions on chemical composition of plants, soil and fertilizer interaction, chemical melioration, classification and agroecological peculiarities of mineral and organic fertilizer application are considered. Questions on technologies, schemes and machines for organic and mineral fertilizer application are examined.

Protection of soil. The course studies the main types of soil degradation and measures for their prevention, reduction or complete removal action. The aim of the course is to provide students obtaining knowledge about the current state of land resources of Ukraine, laws of Ukraine on land protection, causes, extents and consequences of land resources degradation as a result of natural processes and human activities as well as methods of preventing degradation and soil fertility reproduction.

Soil geography. The course studies the laws of geographical distribution, genesis, description of the main soil types in Ukraine, their physical and chemical properties, morphological description of profiles. The problem of classification and taxonomy of soils is discussed. Soil resources of Polissya, Forest-Steppe, Steppe, Dry Steppe, swampy, waterlogged and saline areas, the Carpathians and the Crimea mountainous regions are described.

Bachelor
in specialty “PLANT PROTECTION”
field of knowledge “Agriculture and Forestry”

Form of Study, Licensed Number of Students:	
- Full-time	75 students
- Part-time	50 students
Learning time	4 years
Credits	90 ECST
Language of Teaching	Ukrainian, English
Graduates’ Qualification	Plant Protection Inspector

The concept of training

Experts in Plant Protection develop systems of protective measures against harmful organisms. They have to know the methods of diseases diagnostics, identification of pathogens, determination the species composition of phytophagous, entomophagous and weeds, know their biology and ecology, explore the economic threshold of harmfulness and develop forecasts and the occurrence of pests and diseases.

Practical training

Teaching and research farms of NULES of Ukraine: PC of NULES "Agronomic Research Station", "Velykosnytinske Education and Research Farm named after O. Muzychenko", Education and Research Farm of NULES of Ukraine "Fruit and Vegetable Garden".

Proposed Topics for Bachelor theses

1. Biological features and harmful herbivorous insect of agricultural crops.
2. Phenology of entomopathogenic nematodes – parasitic pests – in growing ornamental plants.
3. Development features of root rot of crops.
4. Integrated action of after stair herbicides on agricultural crops.
5. Species composition and hazard of similar to mouse rodents on agricultural crops and their products.

Academic rights of Bachelors

Graduates have a right to apply for master program in related Bachelor specialties, starting from the second year of study:

8.09010501 – Plant Protection or specialties in the field of study “Specific Categories”:

8.18010010 – “Quality, Standardization and Certification”
8.18010018 – “Administrative Management”
8.18010020 − “Management of an Educational Institution”
8.18010021 – “Pedagogy of Higher School”

Spheres of Bachelors employment

The Classifier of occupations in Ukraine DK 003-95 (2006) for graduate level "Bachelor" set qualification "Inspector Plant Protection" (code 3212 CE). Graduates may find employment specialists in pest control services, research institutions, control and laboratory toxicological and biological plant protection in farms of different ownership or to continue studies in master.

Bachelor's Program and Curriculum in Specialty "Plant Protection"

№	The name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training*					
1	Ukrainian (fo profession)	2	108	2,0	3,0
2	History of Ukraine	1	108	2,0	3,0
3	History of the Ukrainian culture	1	72	1,3	2,0
4	Foreign language	1-2	180	3,3	5,0
5	Philosophy	2	108	2,0	3,0
6	Physical education**	1-4	216	4,0	6,0
Total for the cycle			***576***	***10,6***	***16,0***
1.2. Cycle of natural science (fundamental) training*					
1	Botany	1-2	108	2,0	3,0
2	Further Mathematics	1	72	1,3	2,0
3	Fundamentals of Computer Science	2	72	1,3	2,0
4	Agricultural meteorology	1	54	1,0	1,5
5	General Microbiology	3	72	1,3	2,0
6	Biophysics	1	72	1,3	2,0
7	Chemistry (professional), including	1-3	306	5,7	8,5
	- Inorganic chemistry	1	90	1,7	2,5
	- Analytical Chemistry	1	54	1,0	1,5
	- Organic Chemistry	2	72	1,3	2,0
	- Physical and Colloidal Chemistry	3	90	1,7	2,5
8	Plants Physiology with the bases of chemistry	4	72	1,3	2,0
9	Ecology	3	72	1,3	2,0
10	Genetics	2	72	1,3	2,0
Total for the cycle			***972***	***18,0***	***27,0***
1.3.Cycle of professional and practical training *					
1	Farming	4	90	1,7	2,5
2	Soil Science with the Bases of Geology	3	90	1,7	2,5
3	Agricultural chemistry	5	90	1,7	2,5
4	Crop production with basics of fodder production	5	126	2,7	3,5
5	Selection and Seed Farming	6	72	1,3	2,0
6	Economics and Enterprise, Management	7-8	126	2,7	3,5
7	The fundamentals of scientific researches in Plant Protection	4	90	1,7	2,5
8	Mechanization, Electrification and Automation of Agricultural Production	2-3	144	2,7	4,0
9	Technology of storage and processing of plant products	8	108	2,0	3,0
10	Vegeculture	4	90	1,7	2,5
11	Horticulture	5	90	1,7	2,5
12	Basis of labour protection	4	54	1,0	1,5
13	Life Safety	2	54	1,0	1,5
14	General entomology	5-6	180	3,3	5,0
15	General plant phytopathology	5-6	180	3,3	5,0
16	General Mycology	3-4	162	3,0	4,5
17	Quarantine of plants	7-8	126	2,7	3,5
18	Agricultural rodentology	7	90	1,7	2,5
19	Agricultural entomology	7-8	216	4,0	6,0
20	Agricultural Plant Pathology	7-8	216	4,0	6,0
21	Plant disease prognosis	5	108	2,0	3,0
22	Pest monitoring	6	108	2,0	3,0
23	Herbology	3-4	108	2,0	3,0
24	Plant immunity	7	108	2,0	3,0

25	Chemical protection with the bases of toxicology	6-7	162	3,0	4,5
	Training and Production Practices	2,4,6	540	10,0	15,0
	Diploma Projecting	8	72	1,3	2,0
	Examinations	1-8	468	8,7	13,0
Totally for the cycle			***2988***	***55,3***	***83,0***
Regulatory part, total			**5616**	**104**	**156,0**
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of humanitarian, social and economic training					
1	Economic theory	8	72	1,3	2,0
2	Culturology	1	36	0,7	1,0
3	Law	2	36	0,7	1,0
4	Sociology	4	36	0,7	1,0
Totally for the cycle			***180***	***3,3***	***5,0***
2.1.2. Cycle of natural science (fundamental) training					
1	Radiobiology	2	90	1,7	2,5
2	General virology	4	108	2,0	3,0
3	Fundamentals of biotechnology in plant protection	4	108	2,0	3,0
Totally for the cycle			***306***	***5,7***	***8,5***
2.1.3. Cycle of professional and practical training					
1	Standardization and quality management of plant products	5	108	2,0	3,0
2	Antagonists of harmful microorganisms in plant protection	8	108	2,0	3,0
3	Nematology	3	108	2,0	3,0
4	Protecting of field-protection forest bars from pests	8	108	2,0	3,0
5	Diseases of forest field stands	8	108	2,0	3,0
6	Acarology	4	108	2,0	3,0
7	Protection of ornamental and flower plants from pests	8	108	2,0	3,0
8	Diseases of decorative and floral plants	8	108	2,0	3,0
Totally for the cycle			***864***	***16,0***	***24,0***
Chosen by university, total			***1350***	***25***	***37,5***
2.2. Disciplines chosen by students					
2.2.1. Cycle of humanitarian, social and economic training					
1	Psyhology	2	36	0,7	1,0
2	Political Science	2	36	0,7	1,0
3	Latin	2	72	1,3	2,0
4	Ethics and esthetics	3	36	0,7	1,0
Totally for the cycle			***180***	***3,4***	***5,0***
2.2.2. Cycle of natural science (fundamental) training					
1	Agricultural zoology	1	216	4,0	6,0
2	Beekeeping	6	216	4,0	6,0
Totally for the cycle			***432***	***8,0***	***12,0***
2.2.3. Cycle of professional and practical training					
1	Protecting of medical plants from pests	8	108	2,0	3,0
2	Diseases of Medicinal Plants	8	108	2,0	3,0
3	Biological protection of crops from weeds	8	108	2,0	3,0
4	Diseases of edible mushrooms	8	108	2,0	3,0
5	Protection of edible mushrooms from pests	8	108	2,0	3,0
Totally for the cycle			***540***	***10,0***	***15,0***
Chosen by students, total			**1368**	**25,3**	**38,0**
Elective part, total			**2718**	**50,3**	**75,5**
Practical training			**540**	**10,0**	**15,0**
Degree examination			**108**	**2,0**	**3,0**
Total, according to the field of study			**8640**	**160**	**240**

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Annotations to the disciplines Ukrainian (for profession); History of Ukraine; History of Ukrainian Culture; Foreign Language; Philosophy; Physical Training can be found in 2.1.

1.2. Cycle of natural science (fundamental) training

Botany. Structure of cell, tissue, vegetative and generative organs. Difference of plant's world. Features of different groups of lowest and high plants. Genesis of plants, its role in forestry. Morphology. Productivity of wood biogenesis and actual questions of its rational use and protection.

Further Mathematics. Elements of analytical geometry. Linear algebra. Math analysis. Differential calculation of the one of current values. Investigations of functions by methods of differential changes. Indefinite and definite integral. Differential equations. Rows.

Fundamentals of Computer Science. Calculation technique and information in Forestry. Program micro calculators (MC). Work in the automatic regime and program on MC. Structure, database and software of electronic machines. Personal computers. Packs of programs and their practical using. Program languages. Program of tasks. Tasks solving by personal computer.

Agricultural meteorology. Meteorological, climatic and hydrological processes and their interactions with objects of forestry and horticulture. Physical processes and phenomena in atmosphere. Meteorological factors which influence plant growth and their role in planting and forestry activity. Influence of forest on the apart meteorological elements and climatic regime of a certain region.

General Microbiology. Microorganisms. Exchange of nutrition's. Microbial and soil fertilizing substances. Microbiology of water, air, forage. Morphology and chemical composition of virus. Virus diseases and their control.

Biophysics. Mechanics, kinematics and dynamic of point and hard body. Molecular physics and thermodynamic. Electrostatics. Electric current and electromagnetism. Waves. Optics. Elements of quantum mechanics. Structure of nuclear. Radiation. Radiation influence on biological objects.

Inorganic chemistry is the study of the synthesis and behavior of inorganic and organometallic compounds.

Analytical Chemistry. Subject includes the theoretical foundations of modern analytical chemistry. In Analytic Chemistry it is shown the foundations of Qualitative and Quantitative Analyses of above mentioned compounds of bio-elements and their practical use in agricultural production.

Organic Chemistry. Structure, method of extraction, physical and chemical properties, as well as practical use of the main classes of organic substances such as carbohydrates, spirits, aldegyds, ketons, amines, acids, heterocyclic substances. Studying of properties of amino acids, carbohydrates, lipids, nuclear acids and proteins.

Physical and Colloidal Chemistry. Physical and chemical properties of compounds and solutions. Structure, functions and metabolism of proteins, carbohydrates, amino acids, nuclear acids, vitamins, ferments, macro and microelements, which form the basis of tissue composition. Biochemical processes which form the basis of functional activity of certain organism organs and systems.

Plants Physiology with the bases of chemistry. Physiology of plant cell. Water cycle in plants. Photosynthesis. Breath. Mineral nutrition. Synthesis and transformation of organic matters. Growth of plants. Fruit and seeds ripening. Adaptability and suitability of plants.

Ecology. Ecology science. Definition. Structure. Definition of biosphere. Ecosystem and biogeocenosis. Circling of matter. Ecological pyramids. Notion and classification of pollution. Entropy. Populations. Contamination of environment: acid rains, greenhouse effect, influence forest ecosystems. Nature protection by reserving.

Genetics. Studies key laws of heredity and variability of organisms, explains principles of storage, transfer and implementation of genetic information including cytological and molecular fundamentals of heredity, regularities of inheritance of sex, properties (drawbacks, diseases) linked inheritance, basics of genetic engineering, populations and pure lines, basics of immunogenetics.

1.3. Cycle of professional and practical training

Farming. Soil; fertility and its verifications, soil reproduction, scientifically basis of agriculture and its practical usage, general concepts of agriculture and its practical usage, theoretical principles of crop rotation and its practical usage in the different soil-climatic zones of Ukraine and the land and its protection of soil erosion, agricultural system and its local peculiarities

Soil Science with the Bases of Geology. Soil science is science, which studies genesis, development, structure, composition, properties and laws of geographical distribution of soils, ways of their rational use and restoration of fertility.

Agricultural chemistry includes theoretical and practical problems of crops nutrition and fertilization. They are considered studies on chemical melioration, organic and mineral fertilizers characteristics, and features of their application for different crops. The issues of nutrients balance, fertilization system, joint application of fertilizers and plant protectors are discussed. The attention paid to agriecological aspect of fertilization.

Crop production with basics of fodder production studied modern intensive technologies of food, industrial and fodder crops cultivation. Course based on knowledge about field crops, features of their growth and development, requirements to the environmental factors, up to date tools and technologies of agricultural crops cultivation which provides obtaining of high yields with appropriate quality with minimal labor and finance expenses. Course forms appropriate professional ideology, provides with system of theoretical and applied knowledge's and skills to implement it in practice.

Selection and Seed Farming. Discipline is devoted to studying of modern situation in selection and to the last advances in this sphere, agricultural demands to production of species and their hybrids, tasks and focus area of selective work, technologies of selection process, modern methods of creation af new kinds and hybrids of field crops.

The fundamentals of scientific researches in Plant Protection involves the study of pesticides, their production and toxicological-hygienic characteristics, of modern classifications of pesticide, regulations their application.

Mechanization, Electrification and Automation of Agricultural Production. Gives minimum of knowledge about tractor and automobile design and organization of mechanized agrotechnical operations. Examines construction, workings parts, training for work and principal technical-operating indexes of base models of agricultural and land-reclamation machines. Gives idea about basic electric quantities and measuring devices which are used in agricultural installations.

Technology of storage and processing of plant products is special discipline that studies technology postharvest handling of cereals, legumes, cereal crops, oilseeds, sugar beet, bast crops, hops, tobacco, fruits, vegetable of short and long-term of storage, bases of processing. This is finish discipline after learning technologies cereals, legumes, cereal crops, industrial crops, vegetables, fruits and berries.

Vegeculture. On laboratory-practical lessons have been studied the morphological characteristic of vegetable crops and its classification. Carry out determination of seeds type, germination test. The methods of propagation, accounting of the seedlings quantity for different crops both field and greenhouses have been studied. Also, the methods of control and regulation temperature, light, CO_2 content, air and soil humidity. Calculation of required seeds quantity for vegetables crops, sowing scheme and nourish area. Organization of crop rotation, variety rotation, frame rotation.

Horticulture. They master all technologies of growing fruit and berries from growing planting stock. They learn the features of planting horticultural crops and care for them. Considering that fruit crops are perennial and usually have a long growing season, in their plantations used quite a lot of fertilizers, herbicides, plant protection from pests and diseases. The obtained knowledge will enable specialists in the specialty "Plant Protection" rational use of soil and apply measures to protect and fertilize gardens with high efficiency

Basis of labour protection. In discipline is connected with problems of labor protection organization in agriculture, legal and organizational questions of labor protection, information about the harmful factors of production environment, measures of study and prophylaxis of traumatism in agriculture, basis of fire and electrical safety with the purpose of prophylaxis of accidents and professional diseases in production process.

Life Safety. Refers to the number of modern courses and provides cross-disciplinary and systemic approach to the study of the basic problems of human survival at that stage of the society's development.

General entomology, as a Theoretical and a professionl discipline enables the future specialists to get acquainted with the peculiar features of external structure of insect, the functioning of living organs and their systems, life cicles, multiformty of species and intraspecific forma and their interaction among themselves and the environment sucrounding.

General plant pathology. Program foresees acquaintance of students with science on plant diseases and factors, which cause diseases, influence of ecological conditions on its development. Considerable attention is paid to disease diagnosis, pathogen ecology, its classification, morphological and biological peculiarities and methods of plant protection from diseases.

General Mycology. Course of "General Mycology" makes students to get acquainted with morphological and biological peculiarities and spreading of fungi, its role and meaning in human life and agriculture.

Quarantine of plants. Modern knowledge of fito-sanitary legislation, order and methods of fito-sanitary examination, biology of quarantine and other harmful organisms, absent, on territory of the country.

Agricultural rodentology. (Harmful rodents and lagomorphs) includes the study of a large number of pests, their systematic position, anatomical, morphological, physiological, and biological and ecological characteristics related to the two groups of animals.

Agricultural entomology. The course deals with Introduction to entomology and insect-pest management, including morphology, life processes, ecology and biology of key agricultural pests. Students are provides with knowledge of tactics of population suppression, and ecological backlash and level of entomophagous efficacy.

Agricultural Plant Pathology. Agricultural Plant Pathology studies the crop diseases and works out the system of protection measures from one or group of diseases.

Plant disease prognosis (Prognosis of crop disease development is a part of integrated plant protection system and basis for planning and timely usage of all protection measures).

Pest monitoring course is focused at methods and methodologies of pests sampling and collection in agricultural fields at modern crop rotation and technologies of production . The apart of the courses is phenology and mapping of insect communities structure in agricultural biocecosis.

Herbology. Is one of the basic disciplines of training specialist in plant protection. The lecture course covers scientific basic herbology, characteristics and location of sagittal vegetation in modern agrophytocenoses and its negative impact on crops. The course measures with weed-infested control systems in modern farming systems. Laboratory course is devoted to weed studying and acquisition of practical skills development systems of weed control in field crops.

Plant immunity. Plant immunity studies crop resistance to principal factors, which define its immunity to harmful organisms and includes some working steps of selection of new plant varieties and hybrids resistant to diseases and pests.

Chemical protection with the bases of toxicology. The educational discipline studies main methods of experiment organization, main principles and level of its planning, demands to researches in Plant Protection, statistical analysis of results obtained.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.1.1. Cycle of humanitarian, social and economic training

Economic theory. The discipline forms knowledge in theory and history of world and national culture, understanding of undeniable truth that only dialogue of world cultures let us understand deepness and peculiarities of national culture. The aim — rational learning of integral culture of different nations, understanding of its richness in terms of national culture. Studying of world culture establishment process has a great significance for forming students' scientific world outlook, high moral principles, general inner culture upgrade.

Culturology. Educational discipline gives the students of knowledge of theory and history of world and national culture, awareness of undeniable truth, what only the dialog of world cultures allows to understand a depth and features of national culture. A purpose of educational discipline is the rational mastering of integral culture of the world people, opening of its riches students, through the prism of national culture. A large value has a study of processes of development of the world culture for forming for the students of scientific world view, high moral qualities, increase of cultural level.

Law. Discipline provides students with knowledge about state and law essence, bases of constitutional system of Ukraine, main legislative intents.

Sociology. Innovative categorical apparatus, methods of sociological analysis, basis of social technologies are used in Sociology. The interactions between economic, political and cultural, social processes are examined in the discipline. The role of sociology is determined in the framework of globalised processes; the profile is focused on its human centered principle. The profile of faculty is taken into consideration

2.1.2. Cycle of natural science (fundamental) training

Radiobiology. Properties of ionization effects. Method of its discovering and calculation. Radiation biological effects. Features of radioactive materials migrating in biosphere. Means of radiation control while working with radioactive materials. Implementation of nuclear physics achievements in forestry. Forestry in radioactive contamination of territories. Modes of deactivation of wood production.

General virology. Main purpose of study course «General virology» is acquisition theoretical foundations and formation of practical skills of students who will investigate plant viruses and methods of struggle of viral spread. The practical part of course includes study modern methods which can be use by a work with plant viruses, especially for viral diagnostic and identification by means of biological testing, electron microscopy and immunoassay methods also for getting a unviral landing material by microclonal reproduction method.

Fundamentals of biotechnology in plant protection. The purpose of this course is based on theoretical foundations and the formation of appropriate skills. Special part discipline enables master basic techniques and skills with the culture of plants in vitro, a transgenic plant or plant resistant to herbicides, diseases, adverse environmental conditions, it is necessary for the formation of highly qualified agriculture.

2.1.3. Cycle of professional and practical training

Standardization and quality management of plant products. The discipline provides students with knowledge of theoretical basis of standardization in Ukraine, basis of quality management, methods of plant product control, norms of plant product quality and basis of product certification.

Antagonists of harmful microorganisms in plant protection. The program acquaints students with usage of antagonists properties from microbial pathogens as one of the biological plant protection method. Study morphological and physiological peculiarities of bacteria, fungi and actinomycetes antagonistic to harmful microorganisms.

Nematology. Shows the species composition of the dominant plant-parasitic nematodes, their systematic position, morpho-anatomic and bio-ecological characteristics, hazard, methods of detection, isolation and diagnosis, organizational, economic, agronomic, breeding and other protective measures of main field, vegetable and fruit crops.

Protecting of field-protection forest bars from pests. It is a section of scientific knowledge about the forest insects as of important part of forest agrobiocenosises and adjusting of their quantity by modern measures and facilities with the purpose of increase of firmness and productivity of planting.

Diseases of forest field stands. The program involves the study of diseases of tree and shrub species, main pathogens, the conditions of its development and methods of protection from them. Study diagnostics, biological and morphological features of pathogens forest plantations, allow justifying measures limiting of their development.

Acarology includes the study of large number of mites, their systematic position, anatomical, morphological, physiological, and biological and ecological characteristics, belong to the class of arachnids.

Protection of ornamental and flower plants from pests involves learning the principles of fitodesign compositions with decorative and flowering plants in natural and anthropo-natural, landscape and cultural fitototsises and greenhouse, justify their role in natural regulatory mechanisms and cleaning environment from the adverse factors.

Diseases of decorative and floral plants. Educational discipline “Diseases of decorative and floral plants” acquires students with species composition agents of floral and decorative plant diseases; visual symptoms of display of floral and decorative plants diseases; bioecological features of pathogens; influence of environment conditions on the processes of development of floral and decorative plants diseases; modern methods and methods of protection from floral and decorative plants diseases.

2.2. Disciplines chosen by students

2.1.1. Cycle of humanitarian, social and economic training

Psychology. This is a science which deals with factors, laws and common factors of developmenta and fuctioning of mentality both on the level of individual and on the level of the group, it rpvides students with knowledge of its basic ideas, principles, shows specification, peculiarities and objectives its subject — mentality and psychic.

Political Science. Content of the discipline involves the examination of distinct political spheres of society. Understanding the purpose, structure and functions of politics and power that allows students to get objective knowledge and practical skills in political activities.

Latin. The main objective of the course at the faculty of Plant Protection is to teach students of Latin terminology, operating in botany, plant pathology and zoology, open access to a free and conscious perception of biological nomenclature, which is an essential element in the formation of high-grade specialist in agro-profile.

Ethics and esthetics. The Teaching and Methodical System (TMS) based on the discipline is aimed in logical systematization of studying the achievements of the historical and modern treasury of the ethical and aesthetic thought, as well as at the search for the peculiarities of the cultural process of this aspect in Ukraine, at mastering the ways and methods of the consolidation and spreading the moral and aesthetic wealth in the consciousness of young compatriots.

While teaching the course "Ethics and aesthetics" the attention will be paid first for mastering the knowledge of the moral and aesthetic wealth to be common to all mankind and then for the development of the ability to apply this knowledge into the socio-professional practice in the future. In order to do that the working teaching program will be put into teaching process, that program being the pivot of the above-mentioned TMS and reflecting the major points of the working program on "Ethics and aesthetics" for the students of the higher educational establishments of the III — IV degrees of accreditation (is added) taking into consideration the agrarian trend and specialty (specialization).

2.2.2. Cycle of natural science (fundamental) training

Agricultural zoology. Studying of this course allows to get familiar with biological laws of development of living organisms, principles of animal systematic and evolution of. Attention is paid to modern taxonomy, species biodiversity, morphology of different animal types as well as life process and cycles , effect of environment and the role that pests and beneficial species play in ecosystems.

Beekeeping. Preparation of highly qualified specialists in the field of plant based on modern achievements of a number of special subjects. The introduction of modern technology in beekeeping can not successfully take place without increasing the overall culture of Beekeeping Livestock. Get high productivity of bee colonies is only possible through the introduction of technological methods of keeping and breeding, which should be based on a high genetic potential, the optimal conditions for growth and development of bees, compliance with sanitary rules and regulations.

Study subjects: "Beekeeping" required to get the students knowledge on plants honey and pollination of crops by bees. Expected learning products plants collected bees for their power and provide a marketable product. Served as melliferous plants characteristic of plants, their classification, use to create tricks in different periods of the season. Reveals the role of bees as pollinators of plants, equipment and organization pollination of various crops, effectiveness in increasing yields of fruit and seeds.

2.2.3. Cycle of professional and practical training

Protecting of medical plants from pests. The subject foresees the study of main wreckers of medical plants, losses of harvest, which are inflicted by them in Ukraine and abroad, main reasons, that they are stipulated, economic value of defence of plants from damages.

Diseases of Medicinal Plants. Discipline studies diseases of medicinal plants, pathological process, the main pathogens, its development conditions, and protection methods from them.

Biological protection of crops from weeds involves the study fitontsid-healing properties of plants, their growing, environmental principles and characteristics of their use in different ways.

Diseases of edible mushrooms. Discipline studies diseases of cultivated mushrooms, peculiarities of its infection and pathological process, characterizes the main disease agents of edible mushrooms, conditions of its development and protection measures from them.

Diseases of edible mushrooms. The discipline deals with biology of edible mushroom pests and methods of their control.

Bachelor
in specialty "ECOLOGY, ENVIRONMENT PROTECTION AND SUSTAINABLE DEVELOPMENT"
field of knowledge "Natural Sciences"

Mode of study, number of places under license:	
- full-time education	75 places
- part-time education	75 places
Term of apprenticeship	4 years
Credits	240 ECTS
Language of tuition	Ukrainian, English
Qualification after graduation	Bachelor of Ecology

The concept of training

Preparation concept is to develop future ecologists' professional knowledge, hand-on experience, skills, proficiency and ecological competence, environment protection (according to types of economic activity) and balanced nature management (by types of land, water, forest use also usage of flora and fauna), which are ready for practical, professional-oriented and environment protection activity in Education, Science and Culture.

Practical training

Specialists handling competence takes place at research-and-development farms Separated subdivision of NULES of Ukraine "Velykosnytinske Education and Research Farm named after O.Muzychenko", "Agronomic Research Station" and Institute of Agroecology and Nature Management of National Academy of Agrarian Sciences of Ukraine, Institute of Plant Protection of National Academy of Agrarian Sciences of Ukraine, "Svitanok-agrosvit" LLC, Ukrainian State Science and Research Institute "Resurs", Scientific and Productive company "Agroecosystema LTD" LLC.

Proposed Topics for Bachelor theses

1. Environmental Assessment of crop production technology.
2. Environmental analyses of hydrologic systems function compatibility.
3. Health-related monitoring and ecological certification of safe water-source supply.

Academic rights of Bachelors – are free to continue studying at Master's Preparation Program as per specializations that include modules from Bachelor's Programs from 2nd-3rd years:

8.04010601 "Ecology and environment protection" or specialties at subject area 1801 "Specific Categories":

8.18010010 – "Quality, Standardization and Qualification"
8.18010018 – "Executive Management"
8.18010020 – "Education Establishments Management"
8.18010021 – "High School Education Science"

Spheres of Bachelors employment

Work placements are branch enterprises (agricultural, recycling, nature protection oriented organizations, ecological and naturalist centers, scientific laboratories of ecological monitoring, inspections, certification) at different professional environments.

Bachelors Program and Curriculum in Specialty "Ecology, environment protection and sustainable development"

No	The name of course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. 1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training					
1	Ukrainian language (professional oriented)	1	54	1	1,5
2	Ukrainian History	1	72	1,3	2
3	History of Ukrainian Culture	1	54	1	1,5
4	Foreign Language	1-6	252	4,7	7
5	Philosophy	5	180	3,4	5
6	Physical Education	1-4	216	4	6
7	Political Science	5	72	1,3	2
8	Sociology Science	6	72	1,3	2
9	Legal Science	3	72	1,3	2
10	Psychology and Education Science	6	72	1,3	2
11	Social Ecology	6	108	2	3
Total for the cycle			***1224***	***22,6***	***34***
1.2. Cycle of natural science (fundamental) training					
1	Higher Mathematics	1-2	216	4	6
2	Physics	1	108	2	3
3	Informatics and Systematology	3-4	216	4	6
4	General Ecology	3-4	216	4	6
5	Chemistry and Fundamentals of Biochemistry	7	216	4	6
6	Biology	2	144	2,6	4
7	Geology with Fundamentals of Geomorphology	2	108	2	3
8	Hydrology	2	108	2	3
9	Agrology	3	108	2	3
10	Meteorology and Climatology	1	108	2	3
Total for the cycle			***1440***	***26,6***	***40***
1.3. Cycle of professional and practical training					
1	Introduction to Specialty	6	180	3,4	5
2	Reserve Management and Studies	5	108	2	3
3	Fundamentals of Safety Measures in Life	3	72	1,4	2
4	Landscape Ecology	4	144	2,6	4
5	Techno ecology	5	144	2,6	4
6	Ecological Compliance	5	144	2,6	4
7	Welfare and Safety	3	72	1,4	2
8	Human Ecology	4	108	2	3
9	Ambient Monitoring	6	216	4	6
10	Environmental Law	8	72	1,4	2
11	Regulatory Actions Anthropogenic Load upon Environment	4	216	4	6
12	Economics of Nature Management	7	144	2,6	4
13	Ecology of Urban Systems	7	216	4	6
14	Modeling and Environment State Forecasting	8	108	2	3
15	Environmental Assessment	8	216	4	6
Total for the cycle			***2160***	***40***	***60***
Regulatory part, total			**4824**	**89**	**134**
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of natural science (fundamental) training					
1	Scientific Activities Fundamentals	7	216	4	6
Total for the cycle			**216**	**4**	**6**

2.1.2. Cycle of professional and practical training					
1	Ecology of Biological Systems	5	180	3,4	5
2	*Environmental Protection*	7-8	324	6	9
3	Sustainable Nature Management:	7-8	324	6	9
4	Agro ecology	6	216	4	6
5	Ecotoxicology	7	144	2,6	4
6	Environmental Biotechnology	7	144	2,6	4
7	Agricultural Products Quality Management	8	108	2	3
8	Radiobiology and Radioecology	5	108	2	3
9	Topographies with Cartography Fundamentals	4	144	2,6	4
Total for the cycle			**1692**	**31,2**	**47**
Chosen by university, total			**1908**	**35,2**	**53**
2.2. Disciplines chosen by students					
2.2.1. Cycle of professional and practical training					
Specialization 1 "Ecological Agricultural sphere"					
1	Environmental Protection Agricultural Ecosystem	8	216	4	6
2	Ecological Farming	8	216	4	6
3	Agricultural Chemistry	8	108	2	3
4	Biological Technology in Agricultural Sphere	8	108	2	3
5	Research-and-development Workshop	7-8	108	2	3
Total for the cycle			***756***	***14***	***21***
Specialization 2 "Landscape Ecology"					
1	Ecology of Cultivated Land	7	216	4	6
2	Biogeochemistry and Environmental Chemistry	8	108	2	3
3	Planting of Greenery at Aggregations and Landscape Architecture	8	108	2	3
4	Landscape Ecology (Geoinformation Ambient Monitoring)	6	108	2	3
5	Soil and Vegetative Reclamation	8	108	2	3
6	Research-and-development Workshop	7-8	108	2	3
Total for the cycle			***756***	***14***	***21***
Chosen by students, total			**756**	**14**	**21**
Elective part, total			**2664**	**49,3**	**74**
Practical training			**1044**	**19,3**	**29**
Degree examination			**108**	**2**	**3**
Total, according to the field of study			**8640**	**160**	**240**

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Disciplines annotations "Ukrainian language (professionally oriented)", "History of Ukraine", "History of Ukrainian Culture", "Foreign Language", "Philosophy", "Physical Education" refer section 2.1

Political Science. Students gain knowledge at main theoretical positions of Political Science taking into account latest national and foreign achievements; skills and proficiency in discovering main development trends in Public relations, defining main points and social political foundations; scientific and methodological Public Relations fundamentals.

Social Science. Considers forming of knowledge system about social system of society, social culture, labour and management sociology, get to the heart of social life and culture of society and skills to analyze social phenomenon and processes.

Science of Law. Forms knowledge about theory and history of government and law, constitutional Ukrainian law, basis of disciplinary, civil, family, employment and labour, land, ecological, housing, financing, criminal law; skills to apply practically, generalize and analyze statutory and regulatory material, develop legal problems and to be guided in amendments of Ukrainian legislation which is at the stage of reforming.

Psychology and education science. Forms students' skills about research psychological and pedagogical methods, regularity of some psychical phenomenon and interrelation, types and styles of personal management activity; skills to found out right ways from conflict situations, define and choose correct team management style.

Human Ecology. Forms knowledge according to reasons, scale and consequences of national nature management, finding ways to cooperation with present crisis in interaction between society and nature, socioecological facts of new ethical attitude towards nature from human side; skills to develop management strategy to run anthropogenically and natural ecosystems.

1.2. Cycle of natural science (fundamental) training

Higher Mathematics. Provides forming of knowledge from fundamental sections of Higher Mathematics that corresponds students' professional preparation program: definitions, theorems, rules, forming of initial skills, self directed learning of math's literature and other informational sources, solution to equation of simple algebraic equations, applying of integral calculus; solution of differential and difference equations and their systems; investigating of nearly poised series upon the sum total and using of nearly poised series for approximation computation, and analysis of different environmental processes.

Physics. Forms knowledge about processes that take place at biological systems and are life foundation and activities of wild-life, fundamental principles of physics which underlie life and activities of agricultural plants, synergies between plants and environment, physical factors influence over seed grains, plants and environment for increasing crop-producing.

Informatics and Systematology. Forms knowledge about methods, typical target settings and formalization for processing and databases maintenance, principles of their solvation by computerized tools, conceptual frameworks structural principle electronic document flow system; proficiency to choose technological schema appliance of system-wide and specialized packages of application programs and using them for handling of applied ecological, environment protection problems and sustainable nature management.

General Ecology. After taking over the course students are gaining knowledge about fundamental ideas of Ecological Science: doctrine about biosphere and ecosystems, sources and flaws of energy issues in ecosystems, influence pattern of ecological factors, biotic relation between bionts, species and populations; skills to define natural-resources potential of ecosystem and socioeconomic analyses of their macroeconomic activity.

Chemistry of the basics of biogeochemistry. Provides formation of knowledge of biogeochemical aspects of the biosphere and principles of operation, types of migration, biological cycle and biogeochemical cycles of living matter; abilities to apply methods of biological indication for environmental biogeochemical zoning predict measures to obtain high-quality environmentally friendly agricultural products, analyze situation of biogeochemical endemic regions, to develop recommendations for optimization of anthropogenic landscapes in order to minimize the negative impact of human activity and maintaining a balance between ecosystem components.

Biology. As a result of studying the course students gain knowledge of the impact of economic activities on natural habitats, the most common species of higher plants, plant communities and flora regions, methods and floral phytocenology research, abilities and

skills of geobotany description of meadow, forest and anthropogenic plant communities, identifying plants of various types and indicators habitat and to identify reservations virus infections in agrocenoses.

Geology with geomorphology basics. Generates knowledge about the structure of typing and classification of landforms and geomorphological zoning areas, interconnections and the relationship between geological structures and morphology of the terrain, the ability to establish relationships of soil factors, to determine the erosion processes in different soil-climatic and geomorphological conditions, assess erosion control measures and their role in improving the environment.

Hydrology. Generates knowledge of the hydrological regime of water bodies, environmental problems of water resources, ecological and methodological foundations of hydromorphological analysis of aquatic ecosystems, skills and abilities to determine the conditions of biota effects on aquatic ecosystems of natural and anthropogenic factors, impacts on water ecosystems.

Soil Science. Generates knowledge about soil as a natural body and an integral part of the geosphere, the specific conditions of the soil structure, properties, structure, soil characteristics and patterns of distribution of different soil types, the ability and skills to carry out morphological description, which define the basic tonal processes in soils, diagnose the properties of mineral and organic parts of the soil, to analyze soil conditions for high yield.

Meteorology and Climatology. Generates knowledge about basic meteorological factors, structure, properties and physical processes, meteorological phenomena and mechanisms, ensures the acquisition of skills to assess synoptic weather, meteorological factors influencing agrosphere, using meteorological observations for integrated environmental analysis of the environment condition and making weighted environmental solutions.

1.3. Cycle of professional and practical training

Introduction to profession. Discipline ensures the formation of students' knowledge of the requirements for specialist training in accordance with the construction of higher education and scientific research, the formation of primary knowledge on the basics of ecology and perceptions of future employment, acquirement of the basic concepts and terminology of ecology and understanding of the economic aspects of the environment, understanding of ways of environmental development of society.

Wildness protection. Provides formation of knowledge and skills of complex of organizational, legal, scientific, economic, and educational activities designed to preserve the unique and typical landscapes or specific natural objects of scientific, environmental purposes.

Life Safety. Generates knowledge on keeping working capacity and health under the influence of negative environmental factors, the ability to develop appropriate measures to protect human life, to determine probable damage from violation of conditions of life safety, determine the criteria and standards of life safety, control of hazardous factors.

Landscape Ecology. The discipline ensures the acquisition of knowledge from learning the basic landscape types, namely the overall structure and the basic principles of their formation, their properties, studying the influence of different activities on landscape and the specifics of transformations as a result of anthropogenic factors. During training, students acquire skills to provide general characteristics of condition of landscapes to determine their environmental sustainability, and develop activities to prevent and stop the degradation phenomena, using the latest technologies and approaches.

Technical Ecology. The discipline provides the formation of knowledge and skills to assess the possibility and effectiveness of using alternative energy sources on the basis of ecological and economic analysis of manufacturing processes, to evaluate the features of technogenic pollution of geosphere.

Environmental safety. Generates knowledge on fundamental and applied aspects of ecological safety of environment and skills for using techniques and methodologies to assess the environmental impact, the risks of disasters, processing, analyzing, organizing and summarizing information on environmental safety.

Labour protection. The discipline provides the formation of knowledge about the legal and organizational issues of labor protection. base physiology, occupational health and industrial hygiene, ways and means of protecting people from harmful and dangerous industrial factors, the ability to create measures for rational use and preservation of reserves of financial and material resources necessary for resolving issues of health and safety at work.

Human Ecology. Provides knowledge about patterns of human interaction with the environment, its impact on the preservation of health, adaptation of the human body to technological changes in the environment, the ability to use mapping, mathematical, statistical, social and hygienic methods of monitoring and control in the field of human ecology, to apply methodology for determining environmental Chronobiology aspects for the study of biological rhythms and their adaptive role in anthropogenic ecosystems.

Environmental Monitoring. Generates knowledge about the system of state environmental monitoring, monitoring of air, groundwater of agrosphere, soil and environmental monitoring, monitoring of phytosanitary pests in agrocenosises, skills and abilities of environmental-monitoring reclamation of irrigated and drained lands, to determine the extent of disease assessment.

Environmental Law. Provides a study of current environmental legislation and environmental and legal issues facing the science of environmental law, the study of current natural resource legislation, the main problems related to land use, water use, mineral resources, forest management, using air, flora and fauna, the study of current natural resource legislation, the main problems related to the protection of land, water, minerals, forests, air, protection of flora and fauna

Normalization of anthropogenic impact on the environment. Provides acquisition of knowledge about general characteristics of the problem of anthropogenic impact and the rationale for its regulation, the main types of anthropogenic pressures and those human activities that can cause them, the theoretical aspects of scientific substantiation standards of influence of factors of physical, chemical and biological nature, charts of rationale of regulations and the possibility of their use in practice.

Economics. Provides the formation of students' environmental and economic outlook and provide them with relevant knowledge which will allow future professionals not only determine the level of environmental pollution, the value of damage caused by him, but also conduct effective targeted work on its protection and restoration.

Ecology of urban systems. Specifies knowledge about the basics of spatial modeling of urban systems, principles and approaches to the classification of natural and anthropogenic landscapes, the characteristics of living organisms, their populations and groups in the urban environment, creates acquiring of skills concerned about urban environment, the city as a specific human environment and biota, urbangeosociosystem, landscape regarding the explanation of the environmental, socio-cultural and technological problems of cities.

Modeling and prediction of the environment condition. Provides knowledge of mathematical modeling of the environment condition and the basic laws of distribution of pollutants from the source of emission, the food chain to humans, the basic laws of distribution of pollutants in the environment, their impact on the ecosystem components,

the ability to estimate radiation doses on humans, as well as patterns of dynamics of populations of living organisms and their impact on the environment.

Ecological expertise. Provides knowledge about regulatory and legislative framework of environmental expert activity, general requirements for environmental assessment, the characteristics of geoecological expert as new research and practical activity to assess the mechanism co-adaptation of natural and economic sub-systems, processes and procedures for geoecological expertise, students gain the ability to: conduct environmental assessment of technologies, materials and products.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.1.1. Cycle of natural science (fundamental) training

Fundamentals of scientific activity. Provides learning of search method, storage and processing of scientific information, methodology and methods of theoretical research, the structure and technology of the experiment, using modern sources of scientific information; skills using simulation and mathematical analysis of the object of research, plan and analyze the results of the experiment.

2.1.2. Cycle of professional and practical training

Ecology of biological systems. Provides knowledge of the morphology and physiology of the major groups of microorganisms, their role in the transformation of organic matter in soil processes and increase soil fertility, the role of microorganisms in the synthesis of humus and formation of soil structure, the impact of farming on microbiological processes. Students acquire skills to determine the status of populations of organisms, identify species, measure the number and status of populations, to develop ways to prevent and suppress viral infections.

Environmental protection. Provides acquisition of knowledge and professional abilities and skills of basic and applied ecology, environmental protection (in various industries) skills to solve environmental challenges by selecting the application of environmental scientific research and expert control methods of environmental forecasting, of the environment condition design, environmental control, monitoring, certification, auditing, assessment and inspection of various components of the environment, predict, prevent and eliminate environmental risks and hazards at local, regional, national and global levels.

The balanced nature management. Generates knowledge of the socio-economic, environmental and safety, institutional balance of nature by type of land, water, forest management and use of flora and fauna, the concept of ecological safety of agricultural domain. Students acquire the abilities and skills of a systematic approach to identifying and managing the quality of natural resources, development and implementation, assessment of resource and energy-saving agricultural technologies.

Agroecology. Provides acquisition of knowledge about the impact of environmental factors on productivity of crops, the structure and dynamics of communities of organisms that live in agrocenoses, the basic laws of agroecology, agroecosystems performance and ways to improve it. Acquire abilities and skills to determine the types of agro-ecosystems and their functioning, ways of greening the various agricultural facilities, and make use of agri-environmental maps and models.

Environmental Toxicology. The discipline is focused on the theoretical concepts and knowledge about the impact of exogenous toxicants on living organisms, their reaction to the performance of hazardous chemicals, the mechanisms of adaptation of organisms to the action of xenobiotics and counteract them, skills to master the scientific principles of hazard assessment of chemicals on living organisms and prediction of adverse effects this effect.

Environmental biotechnology. Generates knowledge about biotransformation, biodegradation and bioavailability of the major biochemical pathways of microbiological transformation of organic xenobiotics, genetic basis for the creation of recombinant microorganisms, skills and abilities for the biological removal of heavy metals and radionuclides, making phytoremediation, biological purification and deodorization gas-emission of microbial processing of organic waste.

Quality control of agricultural products. Provides acquirement of learning the basics of technological methods that form the parameters of quality of crop production, formation of skills for monitoring and use of chemicals in manufacturing processes get crop production, conservation and improvement of soil fertility, including natural conditions, market production, the use of agrochemicals in order to optimize feed crops , increased productivity and a high quality crop production.

Radiobiology and Radioecology. Examines the concept and migration of radioactive substances in the agricultural production and the effect of ionizing radiation on phytocoenosis and zoocenosis within agrocenosis. Forms skills and abilities to develop ways of contamination of the environment, ways and means of decontamination of food raw materials, the study of the biological effects of ionizing radiation on plants and animals.

Topography with the basics of cartography. Provides formation of knowledge on significant spatial model, the mathematical basis for maps, coordinate system topography and cartography, modern methods of targeting areas methods of acceptance and use of topographic maps and plans for environmental monitoring. Students acquire skills to conduct topographically-geodetic measurements, mapping modeling and forecasting.

2.2. Disciplines chosen by students

2.2.1. Cycle of professional and practical training

Specialization 1 "Ecology of agrosphere"

Ecological Protection of agroecosystems. Generates knowledge about the structure and functioning of agricultural ecosystems, methods for optimizing agricultural landscapes, forecasts of crop diseases in agrocenosises, the ability to identify and take records of pests and diseases, to predict their development, optimizing agricultural landscapes based on contour reclamation of agricultural areas.

Ecological agriculture. Involves the study of the specificity of formation and functioning of agroecosystems, key anthropogenic factors that affect the environmental sustainability of agro-landscapes, their performance and ways to improve the ecological basis of the principles of ecological basic technological units receiving agricultural products and raw materials. To be able to develop projects of rotation for a particular sector, their development plans, identify common weed species in Ukraine, which vegetate and seed germination make predictions weeds and develop a system of integrated resource-saving protection against them.

Agrochemistry. Involves the formation of knowledge about the basic tasks of chemicals as a basis of agriculture, agro-ecological assessment of mineral fertilizers and their impact on the environment and quality of crop production and technology, charts of and machines for application of organic and mineral fertilizers, agro-ecological potential changes in the environment during their violations.

Biotechnology in the agriculture. Generates knowledge of biotechnology cultivation of isolated cells and tissues, preparation and cultivation conditions of isolated cells, tissues and organs, the use of in vitro methods in plant breeding, the ability to conduct morphogenesis and regeneration in callus tissue culture, evaluation of life and degree of aggregation of cell suspensions.

Specialization 2 "Landscape Ecology"

Ecology of agricultural landscapes. Generates knowledge about functioning of agro-ecosystems, the role of natural biodiversity in agricultural landscapes of stability and structure of agricultural landscapes and environmental sustainability, the ability to identify natural resource potential agricultural landscapes, to build statistical and cartographic models of agro-ecosystems, explore their development by means of modern information systems.

Biogeochemistry and Environmental Chemistry. Includes theoretical concepts of modern bioinorganic chemistry and chemical characteristics of biogenic elements such as hydrogen, halogen (chlorine and iodine), oxygen, sulfur, nitrogen, phosphorus, carbon, alkali (K, Na) and alkaline earth (Mg, Ca) metals and Manganese, Iron, Cobalt, Copper, Zinc, Molybdenum, metal toxicants, chemical processes involving these elements and their compounds from the standpoint of biological and biochemical roles of elements in the objects of living matter, including the relationship of atomic electronic structure, physic-chemical properties and biochemical activity of elements and their compounds, the role biocomplexes and the possibility of using inorganic compounds as medicines regulatory processes and life activity.

Greening of populated areas and landscape architecture. Formation of skills and knowledge on the history of landscape architecture, the main methods of forming a harmonious living environment by the means of landscape architecture, the classification of terrestrial vegetation, the main compositional patterns and methods of forming green areas with agricultural technology of growing plants open and closed ground on the construction technology and maintenance of garden and park facilities.

Landscape Ecology (Geoinformational environmental monitoring). Provides formation of knowledge about the collection, and preservation of spatial and attribute information, methods of GIS analysis and cartographic modeling, geographic information systems in ecology, the acquisition of skills development of geographic information systems spatial analysis, thematic mapping, modeling and forecasting condition of environmental landscapes.

Melioration and phyto land development. Provides acquisition of knowledge about patterns of distribution and development of various measures aimed at radical improvement of the natural environment, abilities and skills of environmental assessment methods and techniques of irrigation, determine the feasibility and effectiveness of reclamation and their complexes in different natural zones, prediction of reclamation systems in the territorial and temporal aspects.

Bachelor
in specialty "BIOTECHNOLOGY"
field of knowledge "Biotechnology"

Learning, licensed volume:	
- full-time	50 people
- by correspondence	50 people
Duration of training	3 years 10 months
Credits	240 ECTS
Language of instruction	Ukrainian, English
Qualifications	Bachelor graduates specialist biotechnology

The concept of training

Graduates acquire expertise on producing department's ecobiotechnology and biodiversity. Curriculum students in «Biotechnology» provide successful proportion between knowledge of engineering, chemical and biological sciences to qualified professionals' expert on biotechnology.

Practical training

Practices are held in students learning labs, problem research laboratory Phyto virology and biotechnology laboratories Intercollegiate "Bioconversion of agricultural" NNVL "Agrobiotechnology fermentation industries", separated subdivisions NUBiP of Ukraine, companies that fit the profile field of study.

Proposed Topics for Bachelor theses

1. Getting crymophylactic lines rapeseed (Brassica napus L) in culture in vitro.
2. Biotechnological production bases and the use of entomophagous on maize crops.
3. Granulation of hop cones in the technology of industrial production of beer.
4. Obtaining virus-free material manor verbena hybrid by biotechnological method.
5. Phylogenetic features Ukrainian isolate of potato virus X-based analysis of the CP gene fragment.

Academic rights of Bachelors can continue their studies in the Master Programme specialties signs which are placed in the curricula of undergraduate programs, beginning with the second or third courses:

8.05140105 Environmental biotechnology and bioenergy
or field of knowledge 1801 "Specific categories":
8.18010010 – «Quality, standardization and certification"
8.18010018 – «Administrative Management"
8.18010020 – «Management of Educational Institutions"
8.18010021 – «Higher School of Pedagogy"

Spheres of Bachelors employment

Graduates work in the food, chemical and biotechnology industries, institutions and environmental health surveillance in control and analytical laboratories, centers of certification, commercial firms, research and design institutes and institutions of Ministry of Education, Academy of Sciences of Ukraine, core public administration, higher and secondary schools.

Bachelors Program and Curriculum in Specialty "Biotechnology"

№	The name of course, practice	Semester	Amount		
			Hours	Credit	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training*					
1	Ukrainian language (for professional purposes)	1	108	2,0	3
2	History of Ukraine	2	108	2,0	3
3	History of Ukrainian Culture	1	72	1,3	2
4	Foreign Language	1-5	216	4,0	6
5	Philosophy	4	108	2,0	3
6	Political Science	6	72	1,3	2
7	Physical Education**	1-5	216	4,0	6
Total for the cycle			***2088***	***38,6***	***58***
1.2. Cycle of natural science (fundamental) training					
1	Higher Mathematics	1-2	270	5,0	7,5
2	Physics	1-2	270	5,0	7,5
3	General and Inorganic Chemistry	1-2	234	4,3	6,5
4	Organic Chemistry	3	234	4,3	6,5
5	Analytical Chemistry	3	234	4,3	6,5
6	Physical and Colloid Chemistry	4-5	252	4,6	7
7	Biochemistry	5	252	4,6	7
8	Engineering and Computer Graphics	1-2	144	2,6	4
9	Computational Mathematics and Programming	1-2	144	2,6	4
10	Ecology	2	54	1,0	1,5
Total for the cycle			***2088***	***38,6***	***58***
1.3. Cycle of professional and practical training *					
1	Cell biology	3-4	180	3,3	5
2	General Microbiology and Virology	2-3	288	5,3	8
3	General Biotechnology	1	270	5,0	7,5
4	Genetics	2-3	270	5,0	7,5
5	Safety	5	54	1,0	1,5
6	Basics of labor	6	54	1,0	1,5
7	biotechnological processes and equipment manufacturing	4	432	8,0	12
8	Electrical and electronics base	4	144	2,6	4
9	Automation biotech industries	7	108	2,0	3
11	Regulatory support biotech industries	3	180	3,3	5
12	Fundamentals of designing	6	180	3,3	5
13	Economics and Organization biotech industries	8	108	2,0	3
Total for the cycle			***2268***	***42***	***63***
Regulatory part, total			**5040**	**93,3**	**140**
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of natural science (fundamental) training *					
1	Biophysics and methods of analysis	6	108	2,0	3
2	Instrumental methods of analysis	6	108	2,0	3
3	Biology (Botany)	5	108	2,0	3
4	Biology (Zoology)	4	108	2,0	3
5	Mathematical modeling and computer applications in biotechnology	6	108	2,0	3
6	Computer Technology and Programming Fundamentals	8	108	2,0	3
7	Ethics and Aesthetics	5	54	1,0	1,5
2.1.2. Cycle of professional and practical training *					
1	Basics of Biodiversity	4	81	1,5	2,25
2	Ecology virus	5	81	1,5	2,25
3	Biosafety (the use of biotechnology)	5	108	2,0	3

4	Plant Physiology	6	126	2,3	3,5
5	Industrial Biotechnology	6	216	4,0	6
6	Applied Ecology	6	162	4,5	4,5
7	Bioengineering	7	162	2,3	4,5
8	Introduction to the profession	7	81	1,5	2,25
9	immunegenetics	7	81	1,5	2,25
10	Essentials of Molecular Biology	8	126	2,3	3,5
11	Technology microbial synthesis of drugs	7	81	1,5	2,25
12	Technology of production of microbial products for agriculture	5	81	1,5	2,25
Total for the cycle			***2088***	***38***	***58***
2.2. Disciplines chosen by students					
2.2.2. Cycle of professional and practical training*					
Block "Environmental Biotechnology"					
1	Environmental Toxicology	7	144	2,6	4
2	Environmental security in agriculture	7	108	2,0	3
3	Terrestrial Ecosystems and methods of biomonitoring	7	108	2,0	3
4	GIT and environmental display	8	135	2,5	3,75
5	Bioconversion of waste	8	108	2,0	3
6	Ecobiotechnology	7	153	2,9	4,25
Block "Agricultural Biotechnology"					
7	Agricultural Biotechnology	8	144	2,6	4
8	Biometods of plant protection	8	108	2,0	3
9	energetical biotechnology	7	135	2,5	3,75
10	Technologies of Bioproduction	8	108	2,0	3
11	Fundamentals of Plant Biotechnology	7	108	2,0	3
12	Biotechnologicalprocesses agritechnologies	7	153	2,9	4,25
Total for the cycle			***756***	***14***	***21***
Elective part, total			**2808**	**52**	**79**
Practical training			**540**	**10**	**15**
Degree examination			**216**	**4**	**6**
Total, according to the field of study			**8640**	**160**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.
**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Annotations disciplines "Ukrainian language (for professional purposes)," "History of Ukraine", "The history of Ukrainian culture", "Foreign Language", "Philosophy", "Physical Education" see. Section 2.1.Politics. Contents discipline involves the examination of distinct political spheres of society. Understanding the purpose, structure and functions of politics and power that allows you to objective knowledge and practical skills of political activity.

1.2. Cycle of natural science (fundamental) training

Higher mathematics. The examples of basic concepts and methods of discipline to demonstrate the laws of nature, the essence of the scientific approach, the specificity of the subject and its role in science and technology.

Physics purpose of the discipline formation in physical science students thinking, in particular, a proper understanding of the limits of the use of different physical concepts, laws, theories and skills to assess the likelihood of outcomes.

General and inorganic chemistry. The aim of the course of General and Inorganic Chemistry is to provide knowledge about the properties, methods of preparation and application of chemical elements and their compounds, skills performance chemical experiment.

Organic Chemistry. Mastering the basic concepts of organic chemistry, the study of the synthesis and analysis of organic substances, processes of purification, separation and identification of mixtures tification, strengthening skills in the chemical laboratory

Analytical chemistry. Discipline examines the theoretical and practical issues of qualitative and quantitative chemical analysis. Specifically discusses the basic requirements for chemicals, reagents and analytical reactions, the concept of separation methods and concentration of cations, anions substances. Methods acid-base titration.

Physical and colloid chemistry. Properties and structure of substances based on their chemical composition, structure and living conditions, the study of chemical reactions and other forms of interaction between particles or chemicals depending on their composition, structure and terms of the processes, study, interpret and determine ways to apply the basic laws of physical chemistry , knowledge of the laws of phenomena that occur at the boundaries of the phases and their use for electrochemical and catalytic processes.

Biochemistry. The study of the chemical composition, structure, transformation of matter and energy that occur in living organisms, particularly plants. Obtaining knowledge on the subject will allow students to determine the flow patterns and the relationship between different metabolic pathways, the principles of regulation and topography, as in the cells, the body as a whole. Establishing patterns of metabolic major classes of organic compounds – carbohydrates, proteins, fats, vitamins, etc., allows you to create appropriate conditions for crops that provide a maximum number of the substance.

Engineering and Computer Graphics. General engineering training course, the subject of which is the construction and reading of drawings, sketches, technical drawings and diagrams. Study courses allow students to read blueprints, design partsof drawings for various purposes, to know and to use state standards in project documents, maintain project documentation.

Numerical analysis and programming. Studying the structure of computer hardware, software for calculation methods on a personal computer, the rules of working with text blocks to design computational algorithms of calculations using spreadsheet and mathematical processors, basic algorithms, programming, elements of Computational Mathematics and Informatics.

Ecology. Examines patterns of interaction between society and nature, the main environmental issues that arise in today's industrial production, the impact of the changed environment on humans, environmental protection, restoration and sustainable use of natural resources, environmental quality management based on modern advances in science, engineering and technology to protect environment.

1.3. Cycle of professional and practical training

Cell biology. We study the structural organization of the cells of living organisms, evolution of living organisms on the planet, research methods, and concepts of cellular signals apoptosis.

General microbiology and virology. The course provides knowledge and current understanding of the morphology, ultrastructure, taxonomy, genetics, physiology and ecology of microorganisms, their metabolism and role in the transformation of organic and inorganic substances in the processes of soil and improve soil fertility. The acquisition of theoretical bases and student's practical skills in the study of viruses and how to limit their spread. Special part involves mastering techniques that are necessary to work with viruses of plants and animals, and in particular the methods of diagnosis and viruses identification.

Total biotechnology. In the discipline studied biotechnology culturing isolated cells and tissue culture of isolated protoplasts, as a basis for cell engineering, the use of in vitro methods in plant breeding, genomics basis, the methodology of genetic engineering, transgenic plants, agricultural DNA technology, teaching the basics of production and use of transgenic animals genetic therapy, biotechnology components of food, enzyme technology, engineering enzymology, industrial biotechnology, environmental issues safety of biotechnology.

Genetics. We study heredity and variability of living organisms. The laws of heredity and variation are valid for all organisms and determine the development of life, because genetics is the theoretical basis for all disciplines, which have as their object living organisms. Heredity and variation is studied on the molecular, cellular and population levels.

Safety. Refers to the number of new courses and provides an interdisciplinary and systematic approach to the basic problems of human survival at this stage of social development.

Basics of labor protection. The problems of implementation of safety management for agricultural enterprises, the certification of workplaces on working conditions, investigating accidents and occupational diseases in the field of agriculture, the main responsibilities of safety officers agricultural enterprises. Analyzes are dangerous and harmful factors of production environment to prevent accidents, injuries, occupational diseases of workers in enterprises biotechnological profile

Processes and equipment biotech industries. The purpose of discipline is mastering the principles of biotechnological processes, technologies and facilities that provide them, and how to determine the basic parameters of raw materials and product biotechnological process.

Electrical engineering and electronics basics. Learning the basics of electrical engineering, which are necessary for in-depth study of electric drives and controls workflow in biotechnology in agriculture.

Automation biotech industries. The purpose of teaching the preparation of biotechnologists is mastering the theory and practice in the application of methods of complex systems of biotechnology by new technology and finding the best option performance.

Regulatory support biotech industries. In the discipline studied the principles and methods of technical regulation and its components: standardization, conformity assessment, metrology, requirements for EN, TR, GATS and their place in the world of modern regulations, the requirements of the Directives mandatory for the European market requirements for safety and quality certified quality system of manufacturers, quality indicators to measure them using all methods of measurement metrology studies, the definition of products in low concentrations GMO, ways and problems of harmonization of Ukrainian system of standardization and certification in the field of biotechnology with international rules and regulations.

Basis of designing. The development of students' design methods biotech equipment, mastering the necessary techniques development and introduction of new bioprocess. The basis of biotechnological processes, equipment and tools to perform basic process operations, the theoretical basis for calculation of parameters of machines and their working groups are covered in the discipline.

Economics and Organization biotech industries. Study on the economic substance and business enterprises, their place and role in the market economy mechanism of creation, operation and management of agricultural businesses using biotechnology. Consider the criteria and indicators of the development of biotechnological production, ways and means of rational use of land, material and labor resources. Method of determining the economic efficiency industries are served. The conditions of the costs and profitability of agricultural and biotechnology industries as well as financial services, operation of business enterprises are highlighted.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.1.1. Cycle of natural science (fundamental) training

Biophysics and methods of analysis. Familiarizing students with the physical environment of living organisms, the study of the effect of physical environmental factors on living organisms and their ability to take these factors respond to them and thus interact with the environment and adapt to it, the coverage of modern physical methods of control environment and principles of instrumentation, used to measure environmental parameters and analyze its condition.

Instrumental methods of analysis. We study the basic theoretical principles underlying physical, chemical and visual instrumental systematic study of biological objects in vitro and in vivo learns the basic techniques of electrophoresis, chromatography, colorimetry and spectrophotometry, the technique works on light, fluorescent, confocal and electron microscopes that is necessary for the formation of highly qualified specialists in the field of biotechnology and ecology.

Biology (botany). Study of structure and activity of plants and their diversity, ranging from the structure of cells, tissues, vegetative and generative organs, depending on environmental factors, and taxonomic distribution of plants and vegetation and their common characteristics, the study of the structure and the structure of plant communities and relationships these phytocenoses. Exploring the diversity of flora oriented at knowledge characteristics of different groups of lower and higher plants, their origin, phylogenetic relationships, the value in agriculture, including plant biotechnology and health environment.

Biology (Zoology). Students gain competence in the basics of taxonomy and faunal diversity of the functioning of individual systems and whole animal organism, the origin and evolution of the major types of wildlife, routes and destinations animal adaptations to living in a changing habitat.

Mathematical modeling and computer applications in biotechnology. We study the concepts and definitions of the theory of modeling, mathematical modeling, elements of mathematical statistics and probability theory required for the assimilation rate rules for statistical data analysis, testing statistical hypotheses using statistical criteria, construction and analysis of linear and nonlinear mathematical models, graphical dependencies means MS Excel for statistical analysis of data and modeling.

Computer technology and programming fundamentals. We study the basic concepts and definitions database rules for their design, development methods tables, forms, reports, queries, templates, dynamic forms for data entry. Students are introduced to modern methods of data analysis, computational algorithms data, create a program for the implementation of computational algorithms.

Ethics and aesthetics. For necessary scientific and methodological level provide students with an opportunity to understand the main provisions of the ethics and aesthetics, opportunity to explain the major ethical and aesthetic approaches to teaching and perceptions of key human values. The main thing is considered to be the acquisition of skills and aesthetic application of ethical principles in everyday and professional activities.

2.1.2. Cycle of professional and practical training

Fundamentals of biodiversity. We consider the current methodology for the analysis of sustainable development and ecosystem functioning. The main goal of the course is mastering the methodology of quantitative and qualitative assessment of biodiversity, master techniques of modern analysis of ecosystems, which are basic in the study of population and interpopulation relationships, the main provisions of modern ecology and biology, the evolution of living organisms in the biosphere, environmental problems of today and how their solution.

Ecology of viruses.The acquisition of theoretical foundations and formation of appropriate skills in the study of viruses and their spread in agrocenoses. Special of the discipline makes it possible to learn basic techniques in working with virological material, identify the virus by biological testing, electron microscopy, immunoassay methods and obtain virus-free planting material by microclonal reproduction is necessary for the formation of highly skilled agriculture.

Biosafety (the use of biotechnology). We study the heredity and variation of organisms with artificially created new features, as well as their distribution and possible consequences for ekobiocenoses.

Plant physiology. We study basic physiological processes in plants, physiology and biochemistry of plant cell, plant water exchange, photosynthesis, respiration, mineral plant nutrition, growth and development of plants and plant resistance to adverse conditions.

Industrial Biotechnology. Study the physiological characteristics of industrial strains, culture media preparation technology for various industrial strains of microorganisms, methods of cultivation, management of industrial strains growing and getting their products from microbial synthesis templates and key stage biotech industries, methods of cultivation producers, operating principles and design bioreactors, directions of substances of primary and secondary metabolism, control methods for the biosynthesis of products based on microorganisms.

Applied Ecology. Students acquire skills to: environmental assessment landscape, identifying environmentally safe ways of objects of the economy, including biotechnology industries; forecasting of emergency situations and making appropriate decisions for the stability of the functioning of the economy, and protection of personnel from possible consequences of accidents, natural disasters, modern destruction and during liquidation of consequences.

Bioengineering. In the discipline of study: cell culture of higher plants, the main types of bioprocess, biotechnology receiving primary, secondary metabolites, the basic principles of industrial implementation of biotechnological processes, circuits fermentation processes, bioreactors, immobilized enzymes and proteins, enzymes technology, technology, monoclonal antibodies, enzyme immunoassay, biosensors the basic directions

and objectives of modern bioengineering, molecular basis of bioengineering, molecular organization of genomes, obtaining individual gene vectors for genetic engineering, expression of cloned genes, genetic engineering of plants, animals, gene therapy, biotechnology and biosafety.

Introduction to profession. As a discipline taught the basic principles and theoretical foundations of biotechnological approaches for culturing cells and tissues under in vitro in plant, medicine, pharmacology and other sectors of the economy, the theoretical and practical aspects of industrial biotechnology ecobiotechnology, genetically engineered immune biotechnology, biotechnology fuels, which contributes to better perception of current biotechnological developments, targeting areas in modern biotechnology.

Immunegenetics. We study the basic concepts and theoretical foundations of current regulations and laws immunegenetics, the formation of humeral and cellular immunity and its role in the development of several pathological processes, teaching methods, approaches and application development used in modern practice based on the use of components of the immune response and given the specificity of the interaction of antibodies with different substances that have antigenic determinants.

Fundamentals of molecular biology. In the discipline of study the structure of nucleic acids, DNA replication, replicon in eukaryotes, local amplification of DNA, replication errors, transcription in prokaryotes, promoters in eukaryotes, chromatin, the processing of RNA, reverse transcription, DNA repair, recombination, gene conversion, recombination specific, mobile elements of the genome, the general scheme of protein synthesis, the discovery of RNA transport, ribosomal proteins, translation initiation, elongation, regulation of translation in prokaryotes, regulation of translation in eukaryotes.

Technology microbial synthesis of drugs. The course provides a system of knowledge about technology and the use of antibiotics, enzymes, vitamins and genetically engineered protein drugs. Shows the current understanding of the biological role of antibiotics, especially the biosynthesis of antibiotics by different groups of producers, biological bases of fermentation to produce antibiotics and general principles of technology of production, mechanisms of action and practical use. Explored technological features culturing microorganisms to produce enzymes, methods of isolation and purification of enzymes, production technology proteolytic, amylolytic, lipolytic and other enzymes, modern methods of immobilization of enzymes and their practical use. Students will become familiar with modern technology getting some vitamins microbial synthesis, recombinant proteins, methods of isolation and purification.

Technology of production of microbial products for agriculture. The course provides knowledge of the system to prevent the negative effects of chemicals by using elements of biological agriculture-based mineral plant-microbe interactions, in particular - the technology of microbial preparations from phosphatemobilizing and nitrogen-fixing bacteria, germs, pathogens antagonists that regulate the power on crops, raise their productivity and resistance to diseases. Microbial preparations to improve their production technology - is an important element of modern ecologically safe technologies for growing high-quality agricultural products does not lead to a deterioration of the environment and saves material resources sector. These students' knowledge on the use of new technologies microbial products for agriculture will be one of the solutions to environmental problems of agriculture in Ukraine.

2.2. Disciplines chosen by students

2.2.1. Cycle of professional and practical training

Environmental Toxicology.Exploring sources of ekotoxins and their behavior in abiotic components of ecosystems, bioavailability, metabolism and bioaccumulation in living organisms, toxic effects ekotoxins and products of their transformation on the ecosystem. Study of Environmental Toxicology, is to capture the essence of theoretical knowledge about the science of poisons, as well as practical skills of action and means of preventing adverse effects of toxicants on ecosystems and humans.

Environmental safety in agriculture.discipline course examines issues of food security through the introduction of sustainable agricultural practices, improved quality of products and raw materials, ways to improve the processes of industrial processing of raw materials, promote the implementation of sustainable methods of afforestation, reforestation and decontamination of hazardous waste, how to preserve biological (in t.ch . genetic) resources to ensure sustainable development of the biosphere, the development of environmental emergencies and implement appropriate solutions to ensure the stability of the functioning of the economy, and protection of personnel against possible consequences of accidents, natural disasters, modern means of destruction and during liquidation of consequences.

Terrestrial ecosystems and biomonitoring methods. Generates specific knowledge about the diversity of terrestrial ecosystems at various levels of the organization, diversity and similarity of functional relationships in ecosystems on different continents, and introduces the typical forms of anthropogenic transformation of terrestrial ecosystems and the possibility of using biomonitoring methods for their study and environmental control. Future specialists acquire basic theoretical principles and practical skills on the structure and functioning biocenotic land cover on Earth, which is the main habitat of man. In general, the course includes three sections: general understanding of terrestrial ecosystems and their components, natural terrestrial ecosystems in the world (major biomes of the world) and ecosystem Ukraine and biomonitoring methods in the study of man-land ecosystems.

GIT and environmental indicator. The study of modern agro-ecological and biotechnological bioticgeoinformation science-oriented elements of the original remote sensing and GIS analysis, combined with the indicatively-index approach - the achievements of the school NUBiP (NAU) on agrosphere. Skills to solve applied problems (TC, key questions, indicators and indices pilot IT support, forecasting).

Bioconversion of waste. The subject examines the transformation of organic material such as plant or animal waste, into usable products or energy sources by biological processes or agents, such as microorganisms. The program includes theoretical concepts ecobiotechnology (physic-chemical and biological recycling processes) and biotechnological methods for processing agricultural waste (biomass composition, wastewater treatment and solid waste, energy production, etc.)

Ecobiotechnology. The course deals with the discipline of modern methods of biotechnology to solve environmental problems. that uses biological systems, living organisms and their metabolic products. In the course of discipline "Ecobiotechnology" discusses methods of cleaning the environment from man-made pollution, restore soil fertility, replacing chemicals, receive and environmentally optimized polymer modification and prevention biocorrosion, biodeterioration and biofouling, study methodological approaches to major destinations provide effective cleaner processes production, switching to closed loop water, anti-corrosion and microbiological biodeterioration of materials, plant biosecurity and the creation of new effective biocides.

Agricultural biotechnology. The purpose of discipline is to familiarize students with the principles of the use of biological knowledge in agricultural production and use agrobiotehnological methods in various fields of agriculture. Biomethods of protection of products. Familiarizing students with the issues of biological protection of crops from pests and based on this knowledge alone implement bio security, integrated systems of protection of crops and fruit trees in production under different forms of management based on species composition of harmful and useful fauna and flora, agro-climatic conditionsarea, and so on.

Energical biotechnology. The course "Energical biotechnology"is considered tobe all possible sources of energy derived from fossil as well as alternative sources. Considers energy, environmental and economic performance of energy is considered. The course may be controversy about the applicability of the considered fuels as energy sources for the purposes of Ukraine.

Technology Bioproduction. Purpose of the discipline - consider using technology Bioproduction agricultural and industrial production, given the urgent needs of agricultural production and new promising developments agrobiotechnology, the formation of students' theoretical and practical knowledge to ensure the implementation and operation of technology Bioproduction in real working conditions of agricultural enterprises and regional bio-laboratories.

Fundamentals of plant biotechnology. The purpose of this course is mastering the theoretical foundations and the formation of appropriate skills. Special of the discipline makes it possible to learn the basic techniques and skills with the culture of plants in vitro, a transgenic plant or plant resistant to herbicides, diseases, adverse environmental conditions, it is necessary for the formation of highly skilled agriculture.

Biotechnological processes agricultural technologies. Exploring one of the priority areas of biotechnology, this covers both basic research and applied studies of the use of living organisms or other biological agents for sustainability and quality of agroecosystems. Development of new technologies, plant growth regulators, microbial plant protection from diseases and pests, bacterial fertilizers.

2.3. EDUCATION AND RESEARCH INSTITUTE LIVESTOCK SCIENCE AND WATER BIORESOURCES

Director - Dzitsyuk Valentina Valentinivna, Doctor of Agricultural Science, Professor.
Tel.: (044) 527-82-58, E-mail: director_nnitvb@ukr.net
Location: Building № 1 Room 34

FACULTY OF PRODUCTION AND PROCESSING OF ANIMAL PRODUCTS

Dean − Associated Professor, Candidate of Agricultural Science
Seba Mykola Vasiliovich
Tel.: (044) 527-83-95 E-mail: nikolay_seba@ukr.net
Location: Building № 1, Room 34

The faculty organizes and coordinates the educational process of bachelors in specialty:

6.090102 Technology of production and processing of livestock products

Graduate degree is awarded by the following departments*:*
M.A. Kravchenko Department of Animal Genetics, Breeding and Reproductive Biotechnology
Tel.: (044) 527-82-30, E-mail: krozgen@ukr.net
Acting Head of Department − Professor, Doctor of Agricultural Science
Sheremeta Victor Ivanovich

Department of Milk, Beef and Pork Production Technology
Tel.: (044) 527-83-93, (044) 527-82-32 E-mail: ugnivenko@i.ua
Head of Department – Ugnivenko Anatoly Mykolaiovich, Professor, Doctor of Agricultural Science

Professor P.D. Pshenichniy Department of Animal Nutrition and Feed Technology
Tel.: (044) 527-85-55, E-mail: otchenashko@rambler.ru
Acting Head of Department − Associated Professor, Doctor of Agricultural Science
Otchenashko Vladimir Vitaliyovich

Department of Horse Breeding, Livestock and Animal Breeding Economics
Tel.: (044) 527-82-68, E-mail: horse_chair@twin.nauu.kiev.ua
Head of Department − Candidate of Agricultural Sciences, Doctor of Economics
Skotsyk Vitaly Yevstafiyovych

Department of Poultry and Small Livestock
Tel.: (044) 527-87-60, 527-84-78, 527-88-49, E-mail: NatPP@meta.ua
Acting Head of Department - Associated Professor, Doctor of Agricultural Science
Ponomarenko Natalia Pavlivna

V.A. Nestervodsky Department of Beekeeping
Tel.: (044) 527-80-71, E-mail: k_pchela@ukr.net
Acting Head of Department − Associated Professor, Candidate of Agricultural Science
Losev Olexiy Mikhailovich

FACULTY OF FISHERY

Dean − Associated Professor, Candidate of Agricultural Science
Kondratiuk Vadim Mikolayovich
Tel.: (044) 527-85-56, E-mail: vadkondratyk@rambler.ru
Location: Building № 1, Room. 80

The faculty organizes and coordinates the educational process of bachelors in specialty:

6.090201 "Water Bioresources and Aquiculture"

Graduate degree is awarded by the following departments*:*
Department of Aquaculture
Tel.: (044) 527-89-65, E-mail: aqua_chair@twin.nauu.kiev.ua
Head of Department – Vovk Nadiya Illivna, Professor, Doctor of Agricultural Science,

Department of Hydrobiology
Tel.: (044) 527-83-10, E-mail: gidrobio@ukr.net
Head of Department –Yevtushenko Mykola Yuriyovich, Professor, Doctor of Biological Science,

Department of General zoology and Ichthyology
Tel.: (044) 527-86-83, E-mail: shevchenko.petr@gmail.com
Head of Department – Associated Professor, Candidate of Biological Science
Shevchenko Petro Grigorievich

Bachelor
in specialty "TECHNOLOGY OF PRODUCTION AND PROCESSING OF LIVESTOCK PRODUCTS"
field of knowledge "Agriculture and forestry"

Form of studies	licensed scope:
- Full time	125 persons
- By correspondence	60 persons
Duration of studies	4 years
Credits	240 ECTS
Courses taught in	Ukrainian Language
Graduate students are qualified as	Livestock products production and processing technologist

The concept of training

Animal production is an important sector of agriculture. Its level of development defines how well the market demand in high-calorie food such as meat, dairy products, eggs etc, is met. Animal production provides raw materials for the food and light industries (meat, milk, leather, wool, wax, feathers, etc.) as well as for production of some drugs and medicines. It is closely linked with crop farming, for which it supplies organic fertilizers. The structure of animal production includes cattle, pigs, poultry and sheep husbandry. Equally important are horse-, bee breeding, pond fish farming, sericulture, etc.

Practical training

In training of fufure profesionals the department closely interacts and cooperates with educational and research facilities of the University VP NUBiP of Ukraine “Agronomic Research Station”, “O. Muzychenko Velykosnitynske NDH”, “NDH Vorzel” and the number of Ukrainian front-edge agricultural enterprises.

Proposed Topics for Bachelor theses

1. Milk production and primary processing in the Main Selection Centre of Ukraine
2. Production of Hisex White hatching eggs by parent stock chicken
3. Production of comb honey in Golosiyivska Research Apiary
4. Process evaluation of Orlov trotter breed horses’ cultivation, training and testing
5. Technology of pork production

Academic rights of Bachelors: the students can continue their studies in the master’s degree program with major whose basics are included in the curricula of undergraduate programs starting from the second training course:

8.09010201 - “Technology of production and processing of livestock products” or specialties in major discipline “Specific categories”:

8.18010010 - “Quality, standardization and certification”
8.18010018 - “Administrative Management”
8.18010020 - “Academic Institution”
8.18010021 - “Higher School Pedagogy”

Spheres of Bachelors employment

Upon successful completion of the Bachelor level studies the specialists can choose to work either in University’s educational and research farms or at agricultural enterprises of different ownership.

Bachelors Program and Curriculum in Specialty "Technology of production and processing of livestock products"

№	The name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training*					
1	History of Ukraine	1	144	2,7	4,0
2	Ukrainian language (for professionals)	2	144	2,7	4,0
3	History of Ukrainian culture	1	108	2,0	3,0
4	Physical culture**	1-4	216	4,0	6,0
5	Foreign language	1-2	288	5,4	8,0
6	Philosophy	4	180	3,4	5,0
Total for the cycle			***864***	***16,2***	***24,0***
1.2. Cycle of natural science (fundamental) training					
1	Higher mathematics	1-2	288	5,4	8,0
2	Physics	2	144	2,7	4,0
3	Inorganic and analytical chemistry	1-2	216	4,0	6,0
4	Organic chemistry	2	144	2,7	4,0
5	Biological, physical and colloid chemistry	3	144	2,7	4,0
6	Animal ecology	4	108	2,0	3,0
7	Morphology of agricultural animals	1	180	3,4	5,0
8	Physiology of agricultural animals	2	180	3,4	5,0
9	Genetics and biometrics	3	288	5,4	8,0
Total for the cycle			***1692***	***31,7***	***47,0***
1.3. Cycle of professional and practical training					
1	Introduction to core professional course	1	54	1,0	1,5
2	Technology of animal reproduction	4	144	2,7	4,0
3	Occupational health	5	144	2,7	4,0
4	Biotechnology	6	144	2,7	4,0
5	Animal nutrition and feed technology	4-5	288	5,4	8,0
6	Animal breeding	4-5	288	5,4	8,0
7	Animal hygiene	4-5	288	5,4	8,0
8	Technology of poultry production	6	216	4,0	6,0
9	Technology of sheep production	7	180	3,4	5,0
10	Technology of beekeeping	6-7	162	3,0	4,5
11	Horse breeding	3	144	2,7	4,0
12	Technology of milk and beef production	7-8	270	5,0	7,5
13	Technology of pig production	7-8	252	4,7	7,0
14	Economics and accounting in animal husbandry	7	144	2,7	4,0
15	Management and marketing in animal husbandry	8	108	2,0	3,0
16	Life safety	6	72	1,4	2,0
17	Technology of processing livestock products	8	180	3,4	5,0
Total for the cycle			***3078***	***60,3***	***85,5***
Regulatory part, total			**5634**	**108,2**	**156,5**
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of humanitarian, social and economic training					
1	Economics	3	144	2,7	4,0
2	Sociology	5	72	1,4	2,0
3	Psychology	6	72	1,4	2,0
4	Legal science	5	72	1,4	2,0
5	Political science	7	72	1,4	2,0
6	Ethics and Aesthetics	1	36	0,7	1,0
Total for the cycle			***468***	***9,0***	***13,0***
2.1.2. Cycle of mathematical and natural science (fundamental) training					
1	Computer science	3	144	2,7	4,0
2	Zoology	1	108	2,0	3,0

3	Perspective geometry	3	144	2,7	4,0
4	Microbiology	3	144	2,7	4,0
Total for the cycle			***540***	***10,1***	***15,0***
2.1.3. Cycle of professional and practical training					
1	Technology of slaughter products	7	144	2,7	4,0
2	Production in agricultural enterprises	8	144	2,7	4,0
3	Standardization of animal products	8	144	2,7	4,0
4	Mechanization of production processes in animal husbandry	5	180	3,4	5,0
5	Heat engineering	6	108	2,0	3,0
6	Materials science	6	108	2,0	3,0
7	Technological equipment of meat processing plants	7	108	2,0	3,0
Total for the cycle			***936***	***17,5***	***26,0***
Chosen by university, total			**1944**	**36,6**	**54,0**
2.2. Disciplines chosen by students					
2.2.1. Cycle of mathematical and natural science (fundamental) training					
1	Radiobiology	4	90	1,7	2,5
2	Grassland management	2	144	2,7	4,0
3	Histology	1	108	2,0	3,0
Total for the cycle			***342***	***6,4***	***9,5***
2.2.2. Cycle of professional and practical training					
1	Design and construction of livestock products manufacture and processing companies	4	108	2,0	3,0
2	Prevention of animal diseases	8	180	3,4	5,0
3	Research methodology	6	108	2,0	3,0
4	Technology of aquaculture production	5	108	2,0	3,0
5	Technology of rabbit breeding and animal farming	6	108	2,0	3,0
6	Raw milk	7	108	2,0	3,0
7	Reserve officers' military training	5-8	675	-	-
Total for the cycle			***720***	***13,4***	***20,0***
Chosen by students, total			**1062**	**20,0**	**30,0**
Elective part, total			**3006**	**56,4**	**84,0**
Practical training			**612**	**11,3**	**17,0**
Degree examination			**144**	**2,6**	**4,0**
Total, according to the field of study			**8640**	**160**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.
**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Brief description of disciplines "Ukrainian language (for professionals)," "History of Ukraine", "History of Ukrainian culture", "Foreign Language", "Philosophy", "Physical Culture" can be found in Section 2.1.

1.2. Cycle of mathematical and natural science (fundamental) training

Higher mathematics. The discipline helps the students to learn the basics of elementary mathematics; the attention is focused on clarifying the content of concepts and their relationships; the inherent nature of mathematics and deductive methods of reasoning as well as on the extensive coverage of mathematical models and algorithms, including through the computer analysis.

Physics. The discipline provides students with a deep knowledge of physics and biophysics fundamentals; it studies the physical and physicochemical phenomena in biological objects; the fundamental processes in wildlife. The specifics of the course are determined by the need to study the laws of physics that underlie any process, physical characteristics and properties (mechanical, thermal, electrical, magnetic, optical) of animals, effects produced on animals by a variety of external physical factors (light, sound, ultrasound, infrasound temperature, electric and magnetic fields, etc.), the ability of animals to perceive and respond to these factors.

Inorganic and analytical chemistry. In this discipline the students are taught the basic chemistry laws; chemical properties of biogenic elements and their important compounds; characteristics of chemical processes accompanying production and processing of animal products.

Organic chemistry. The discipline generates in future professionals understanding of modern concepts in organic chemistry, which allows them to understand the animal tissues' structure and chemical processes occurring in living systems.

Biological, physical and colloid chemistry. The discipline provides students with knowledge of biochemical processes occuring in living organisms, and biochemical methods that are used to determine biochemical parameters characterizing the physiological state of organism under normal and pathological conditions.

Animal ecology. The discipline is designed to deepen the student's knowledge about environment, generate in future professionals ecological thinking and perspective.

Morphology of agricultural animals. This is a general biological discipline that studies the domestic animal and poultry anatomy, and is basic in preparation of the animal product production and processing technologists. After having studied the morphology of farm animals the students acquire the foundations of knowledge about domestic animal anatomy from perspective of their species, breed and age.

Physiology of agricultural animals. The discipline provides students with theoretical knowledge about basic physiological processes in the farm animals' body: circulation, digestion, respiration, metabolism and energy exchange, reproduction, excretion, lactation. It introduces ther future professionals to neurohumoral regulatory mechanisms of animals. Special attention is paid to physiology of muscles and nerves in the central nervous system, higher nervous activity and analyzers (senses).

Genetics and biometrics. The discipline studies cytological and molecular basis of heredity and variation; structure and function of genes; genetics of ontogeny and populations. Genetics is necessary for planning of domestic animals' breeding and enables the professionals to understand the nature of biodiversity; prevention of hereditary diseases and abnormalities in farm animals. Application of genetic techniques makes it possible to predict manifestations of breeding traits in animal phenotype.

1.3. Cycle of professional and practical training

Introduction to core professional course. The objective of this discipline is to provide future professionals with necessary knowledge about structure of educational institutions and educational system in the country; teach them the concepts of development on which the leading universities in Europe and across the world base their activity; modern technologies of milk, beef, pork, sheep and goat production, beekeeping, horse breeding, poultry, rabbits and fur farming.

Technology of animal reproduction. The discipline studies the anatomy, physiology and neurohumoral regulation of breeding animals, rational technology of using breeding animals in breeding farms; rational organization of artificial insemination stations, breeding and reproduction herd laboratories; basics of cryobiology and other means of of preserving anabiosis in generative cells; basic techniques of inseminating females belonging to basic animal species by using existing methods; operational control and accounting of farm animals' reproduction.

Occupational health. This is a normative discipline that is studied in order to develop in the students knowledge about current status and issues of labor safety in the animal production. The discipline specifies organizational safety requirements and inter-sectoral safety regulations (NPAOP – Ukrainian Labor Protection Regulations) implemented in animal production enterprises to create labor protection systems; create and operate labor protection services in businesses and enterprises; ways, methods and means of satisfying environment and safety requirements during technological processes in the animal production sector; develop management decisions to prevent accidents, injuries and occupational diseases in the sector businesses.

Biotechnology. The discipline studies the possible practical applications of basic biology achievements and methods of receiving biologically active substances to improve reproductive function in animals. The discipline also teaches future professionals how to intensify the selection process by receiving and transfering embryos from the best breeding animals.

Animal nutrition and feed technology. The discipline is aimed at fostering in students the knowledge, abilities and skills in scientifically substantiated animal feeding, storage and rational use of feeds. The students study biology of individual species and sex-age groups of animals, the role played by nutrients in the functions of living organism; organization of full-value animal feeding based on detailed rules, rational methods, preparation of forages with regard to environmental and economic conditions and animal welfare.

Animal breeding. The objective of this discipline is to teach students the origins and evolution of agricultural animals; main features of breeds; patterns of individual agricultural animal breeds and species; exterior, interior, agricultural productivity of animals and factors causing them; selection of agricultural animals; evaluation and selection of animals by phenotype, progeny, origins; organizational aspects of agricultural animal selection; methods and forms of agricultural animal selection.

Animal hygiene The discipline helps students to get better knowledge about the science of protecting and preserving animal health; it studies sanitary and veterinary-sanitary requirements for environmental factors and livestock buildings; considers the influence of microclimate and quality of feed, water and soil on animal health and productivity; effective ways of preventing the negative impact of harmful substances on animals; regulations and sanitary requirements for housing, feeding and maintenance of various farm animal types and sex-age groups, livestock buildings and equipment for animals.

Technology of poultry production. The discipline studies breeds and cross breeds of various poultry species; specifics of breeding and incubation of chicken, duck, geese, turkey, quail, guinea fowl and ostrich eggs; modern production and processing of poultry and eggs, and fatty liver of ducks and geese.

Technology of sheep production. The discipline is part of a special technology and is tought to provide students with a system of theoretical knowledge and practical skills in breeding, biotechnology reproduction, feeding, maintenance of sheep and production of sheep products.

Technology of beekeeping. The discipline reveals for students the basic provisions of bee colonies's productivity through introduction of technological keeping and breeding methods based on a high genetic potential; creating optimal conditions for the growth and development of bees; compliance with sanitary and hygienic norms and rules; advanced technologies of producing honey, wax, pollen (bee pollen), propolis (bee-glue), royal jelly and bee venom; biology and chemistry of honey, wax and other biologically active products' making process. The discipline allows students to study properties of biologically active products, their effect on quality of different factors and methods of determining fraud; organization of production at the apiaries of different ownership.

Horse breeding. The discipline examines the origins and domestication of horses; principles and methods used to evaluate their exterior, build, quality of movement and apttitute of being used for different purposes. The discipline also contains information about structure and characteristics of horse breeding and its components; government measures to promote horse breeding in the country.

Technology of milk and beef production. The discipline inroduces students to biological characteristics, growth parameters, reproduction and breeding of cattle. Students are taught the basics of modeling processes in cattle breeding; technologies of breeding replacement calves and milk production at conventional and specialized farms with extensive use of energy saving technologies.

Technology of pig production. The discipline emphasizes the economic importance and prospects of pig breeding; biological and nutritional value of pork; swine origins; biological characteristics of wild and domestic pigs; breeding factors; stages of creating modern breeds; different breeds of pigs; breeding work in farms of different categories; maintenance and feeding of pregnant and lactating females; biological features and critical periods in raising piglings; substantiation of piglet weaning schedule; technology of pig farming; raising replacement calves; fattening pigs.

Economics and accounting in animal husbandry. The discipline provides knowledge about accounting, planning of livestock production and defining its cost-effectiveness.

Management and marketing in animal husbandry. The discipline is meant to generate in students a system of knowledge and skills in management of animal production planning processes. It examines theoretical and practical aspects of control over livestock production; basic principles of integrated market research, including market supply and demand, strategy of covering consumer markets, requirements for production, import, use, packaging, labeling, transportation of livestock products, principles of quality assurance and safety of animal products.

Life safety. The discipline focuses on common patterns of risks, their properties and potential impact on human life and health; methods of prediction, detection and identification of hazards and their effects on humans and the environment.

Technology of processing livestock products. The discipline provides knowledge about processes of manufacturing a wide range of high-quality animal products; regulatory requirements for quality of raw materials and manufactured products made from it based on existing technologies and manuals at processing plants; assessment of their quality according to requirements set forth in normative documentation.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.1.1. Cycle of humanitarian, social and economic training

Economics. The discipline provides students with knowledge about the laws underlying development of social production, its mechanisms and the effective use of economic laws for better satisfaction of consumers' physical, social and economic needs. The discipline sets forth basic principles of economic development; basics of market economy; economic growth and socio-economic progress; the world economy and international economic relations.

Sociology. The discipline helps students to grasp the major theoretical areas of sociology; sociological understanding of culture and society, social structures and groups, social organizations and institutions, social deviations and social control, social stratification and basic forms of social inequality.

Psychology. The discipline provides students with knowledge about facts, patterns and mechanisms of the psyche. Its objective is to help students understand the nature and specificity of mental processes, states, personality traits as the basis of its development in the course of upbringing, training and education; learn terms and concepts of management psychology.

Legal science. The discipline generates in students a system of knowledge about legal regulation of agrarian relations; legal support of farms' business, land tenure and land use; environmental protection; natural resource management; environmental security.

Political science. The discipline generates in students a system of logically completed basic knowledge about policies and adequate skills as the basis for building their political consciousness and political culture; it acquaints students with the essence, genesis of political science as a separte science and discipline, main issues it considers and the current state of their solution.

Ethics and aesthetics. The objective of this discipline is to present logical systematization of historic and modern achievements in ethics and aesthetics; search for features of this cultural process in Ukraine; present the ways and methods of establishing and spreading moral and aesthetic values in the minds of the young people. The discipline emphases prioritized role of universal moral and aesthetic values, the ability to apply this knowledge in future social and professional practice.

2.1.2. Cycle of mathematical and natural science (fundamental) training

Computer science. The discipline examines the structure of modern computer equipment; specialized software for calculations; methods of work with a personal computer; rules of working with text blocks and computing algorithms; calculations by using spreadsheet and mathematical processors; basic algorithmic and programming elements of Computational Mathematics and computer science.

Zoology. The discipline presents a fundamental base of knowledge about animals; it considers wildlife from the simplest to chordate animals; examines the morphology and anatomy of animals, their physiology and ecology, taxonomy and geographic distribution, location and role of animals in ecosystems and agrocenoses. Special attention given to groups and species of animals most important for agriculture and the local fauna.

Perspective geometry. The objective of the discipline is to teach future agricultural professionals read and execute drawings of machines, mechanisms and civil structures; analyze geometric shapes of objects; develop abstract, logical and spatial thinking. The discipline examines theory of projections, properties of elementary shapes; methods and algorithms used to solve complex problems of metric and position nature.

Microbiology. The objective of this discipline is introduce students to classification, nomenclature, morphology, physiology and genetics of microorganisms and determine their role in the cycling of matter in nature; study the effect produced on microorganisms by environmental factors; analyze microflora of air, water, soil, food, foodstuff, agricultural and industrial raw materials of plant and animal origin.

2.1.3. Cycle of professional and practical training

Technology of slaughter products. The discipline studies the issues related to quality and technological characteristics of meat productivity of farm animals as raw materials for processing industry; delivery of slaughtered animals to meat processing factories under existing systems and normative documentation; technology and slaughter products' processing and storage; evaluation of meat quality indicators for its technological and culinary properties and methods of preserving meat and meat products.

Production in agricultural enterprises. The discipline helps students master a system of theoretical knowledge and practical skills in the organization of production, use of new scientific and technical solutions, labor and production means to increase production while optimizing costs.

Standardization of animal products. The discipline studies international and national standardization of animal products and production processes; feeds, monitoring and quality control of agricultural products; liability borne by companies and officials for violations of existing standards.

Mechanization of production processes in animal husbandry. The objective of this discipline is to help students acquire knowledge and skills enabling them to substantiate mechanized processes in animal product production enterprises. The discipline highlights the main provisions of zootechnical requirements for the performance of mechanization processes in animal husbandry; operating principles and process control over animal production machinery and equipment; economic evaluation of machinery and assemblies.

Heat engineering. The objective of this discipline is to help students obtain the knowledge and skills necessary to understand and calculate thermal processes; analyze basic thermodynamic processes; identify common patterns of heat transfer and ways of its intensification; assess methods of evaluating power systems in agriculture.

Materials science. The discipline provides a basic knowledge about structure and properties of various materials used in engineering; types of thermal and chemico-thermal treatment; principles of choosing material grades depending on environment where parts operate and the suggested requirements for durability and structural strength of the product. It generates in students a system of knowledge and skills enabling them to select and use various metals, alloys and other advanced materials by taking into account a score of physical and mechanical properties; apply methods of improving the production process and enhance its safety.

Technological equipment of meat processing plants. The discipline examines the structure of part assembly machines; production-and-conveyer lines for processing slaughtered cattle, produce semi-finished and ready-to-eat meat products and process milk to obtain dairy products.

2.2. Disciplines chosen by students

2.2.1. Cycle of mathematical and natural science (fundamental) training

Radiobiology. The discipline introduces students to science on the effect produced by ionizing radiation on living organisms and their communities; studies consistent pattern in these effects in order to find ways of controlling reactions of living organisms.

Grassland Management. The objective of this discipline is to provide students with the scientific system of knowledge about grassland management; generate in future professionals vocational skills to address issues of grassland farming intensification in different climatic zones of Ukraine. The students will acquire knowledge by analyzing the fodder production industry and grassland management; measures to improve natural grasslands, create and rationally use high-intensity meadows and pastures; formation of raw material conveyors with annual and perennial herbs and alternative forage crops for harvesting high quality forage.

Histology. The discipline examines the structure and function of eukaryotic cells, their reproduction, development and structure of gametes; fertilization and early stages of vertebrate embryogenesis; development, structure and function of epithelial, connective, muscle and nervous tissue; microstructure of individual mammal and bird body parts.

2.2.2. Cycle of professional and practical training

Design and construction of enterprises for the production and processing of animal products. The discipline introduces students to technological design standards applicable to livestock products production and processing enterprises: Departmental Process Design Standards, State Building Codes, Sanitary Design Standards of Industrial Facilities and Laws of Ukraine.

Prevention of animal diseases. The discipline studies the measures taken to ensure prevention and elimination of infectious, parasitic and noninfectious diseases; considers veterinary and sanitary measures; means and ways of implementing them on livestock production facilities specializing in the production of animal products; helps students grasp the basics of prevention-oriented mindset allowing them to solve basic problems related to animal health and obtain from animals viable and healthy progeny and high-quality and safe products.

Research methodology The discipline studies basic principles of research methodology in animal production; modern classification and methods of zootechnical experiments; selection methods; systematization and analysis of scientific information and research; rules applicable to writing scientific work and protection of intellectual property rights.

Technology of aquaculture production. The discipline studies the organizational structure of pond fisheries; their arrangement; biology of major cultivation facilities in pond fishery aquaculture; the impact of environmental factors on aquatic activity; the basics of selection and breeding in fish farming; methods and measures applied to intensify pond fishery; fish reproduction techniques; basic technological processes in warm- and cold-water aquaculture; fish diseases and basic health care and prevention activities in fish farming.

Technology of rabbit breeding and animal farming. The objective of this discipline is to provide students with a system of theoretical knowledge and practical skills in breeding, feeding, maintenance of rabbits and production of rabbit products: meat, pelts, down.

Raw milk. The discipline studies the chemical composition and properties of whole cow's milk as a raw material in processing plants; assessment of its quality indicators as per GOST 3662-97; inheritance and paratypical factors affecting the composition and properties of raw milk; hygiene requirements for process milk production; organization of primary processing, delivery and separation of milk.

Bachelor
in specialty "WATER BIORESOURCES AND AQUACULTURE"
field of knowledge "Fisheries and Aquaculture"

Form of studies, licensed scope:	
− full time	75 persons
− by correspondence	75 persons
Duration of studies	4 years
Credits	240 ECTS
Courses taught in	Ukrainian language
Graduate students are qualified as	Aquaculture Process Technologist

The concept of training

Modern fish farming requires new technologies that professionals cannot implement without deep theoretical knowledge of such issues as water quality, ecological status of water bodies, value of hydrocole in functioning of aquatic ecosystems, knowledge of water bio-source potential and its sustainable use.

Development of new and improved fish breeding technologies in natural conditions and in industrial farms also require theoretical knowledge about potency of the species, their physiological and biochemical characteristics, processes of acclimatization and adaptation hydrocole undergo under impact of changing, aquatic environment, intensification of fish farming through the use of bio-active substances with the purpose of enhancing bio- and fish productivity of various ponds, preserving in them biodiversity and harvesting high-quality fish products.

In the course of this program, the students will be taught hydro-ecological disciplines: fish physiology, fish genetics, fish anatomy, aquatic chemistry, hydrochemistry, fish breeding and selection; professionally oriented disciplines: biological basis of fisheries, research methods in fish farming, aquarium basics, bioresources of hydrosphere and their use; fish processing technology and preparation technology: design of fish-breeding enterprises, aquaculture of natural ponds, aquaculture of artificial reservoirs, fisheries hydraulic engineering with the basics of geodesy, fishing farming and others.

By the end of their studies the experts on aquatic biological resources and aquaculture in process of their training acquire the strong fundamental and practical training in cold and warm water fish farming.

Practical training

While studying at the University, the students receive a thorough theoretical and practical training in modern laboratories equipped with new equipment, in computer classes as well as at leading fishery enterprises such as PJSC "Kyyivrybhosp", SE "Irkliiv Fishpond", SE "Ukrryba", DG "Great Lubin", PJSC "Hmelnytskrybhosp", PE "Aquarium Technologies", PJSC "Sumyrybhosp", PJSC "Hersonrybhosp", JSC "Vilshanka", ARC "Kherson Fishermen", PJSC "Poltavarybhosp", Fishing Farm "Nyvka", IRG NAAS of Ukraine, JSC "Chernihivrybhosp", Astrakhan State Technical University (Astrakhan, Russia) and the Louis Pasteur National Lyceum (France) and others.

Proposed Topics for Bachelor theses

1. Design of coldwater pond rainbow trout (Oncorhynchus mykkis) breeding farm;
2. Technology of carp fish reproduction in JSC "Chernihivrybhosp";
3. Fish breeding and biological rationale for the commercial Siberian sturgeon (Acipenser baeri stenorrhynchus) breeding farm project;
4. Channel catfish (Ictalurus punktatus) and specifics of its reproduction in JSC “Chernihivrybhosp” fish farm;
5. Factory reproduction of bighead carp in JSC “Chernihivrybhosp” fish farm;
6. Effect of temperature factor on reproductive capacity and growth rate of grass carp bred in National Academy of Sciences of Ukraine Belotserkovskiy hydro-biological station ponds;
7. Industrial exploitation of fish fauna in the Kiev Reservoir;
8. Technological features of collecting herbivorous fish eggs exposed to heavy metals in water, in VP NUBiP of Ukraine "Nemishaivo Agricultural College" fish farm;
9. Effectiveness of prevention measures in factory breeding of carp fish;
10. Ecological conditions of bream (Abramis brama L.) natural reproduction and its role in the Dnieper-Bug estuary ecosystem.

Academic rights of Bachelors

The students can continue their studies in the master’s degree program with major whose basics are included in the curricula of undergraduate programs starting from the second or third training courses:

8.09020101 - "Water Bioresources"

Or with major in 1801 "Specific Categories":

8.18010010 - "Quality, Standardization and Certification"

8.18010018 - "Administrative Management"

8.18010020 - "Management of Academic Institutions"

8.18010021 - "Higher School Pedagogy"

Spheres of Bachelors employment

Upon successful completion of bachelor’s degree course the specialist can perform professional work specified under the Classification of Occupations DK 003-2005, approved and put into effect by Resolution № 257 dated 27.07.1995 of State Committee of Ukraine for Standardization under the following classification groups and professional work titles: laboratory technician (biological research), laboratory technician assistant (biological research), fish culturist-technician, aquaculture technician, fish culturist-engineer, aquaculture process engineer, state fisheries inspector and may hold primary positions of a fish culturist, ichthyologist, hydrobiologist and state inspector.

Bachelors Program and Curriculum in Specialty "Water Bioresources and Aquaculture "

№	The name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training*					
1	Ukrainian language for professionals	1	108	2,0	3,0
2	Foreign language	1−2	252	4,7	7,0
3	History of Ukraine	1	108	2,0	3,0
4	History of Ukrainian culture	1	108	2,0	3,0
5	Philosophy	3	108	2,0	3,0
Total for the cycle			***684***	***12,7***	***19,0***
1.2. Cycle of mathematical and natural science (fundamental) training*					
1	Applied mathematics	1	144	2,7	4,0
2	Computer and software engineering	2	144	2,7	4,0
3	Biophysics	2	144	2,7	4,0
4	Chemistry	1−2	396	7,3	11,0
5	Hydrobotanics	2	144	2,7	4,0
6	Zoology	1−2	288	5,3	8,0
7	Hydroecology	3	180	3,3	5,0
8	Hydrobiology	3−4	324	6,0	9,0
9	Fundamentals of ecology	3	108	2,0	3,0
Total for the cycle			***1872***	***34,7***	***52,0***
1.3. Cycle of professional and practical training *					
1	Ichthyology	4−5	288	5,3	8,0
2	Occupational health	7	144	2,7	4,0
3	Physiology of fish	4	144	2,7	4,0
4	Fish genetics	3	144	2,7	4,0
5	Fish farming hydraulic engineering and basics of geodesy	5	180	3,3	5,0
6	Cultivation and breeding of fish	5−6	288	5,3	8,0
7	Feeding of fish	6	216	4,0	6,0
8	Economics of fishery enterprises	8	288	5,3	8,0
9	Ichthyopathology	5	144	2,7	4,0
10	Aquatic biochemistry	3	144	2,7	4,0
11	Life safety	4	108	2,0	3,0
12	Fishing	5−6	252	4,7	7,0
13	Aquaculture of natural reservoirs	7−8	288	5,3	8,0
14	Aquaculture of artificial reservoirs	7−8	576	10,7	16,0
Total for the cycle			***3204***	***59,3***	***89,0***
Regulatory part, total			**5760**	**106,7**	**160,0**
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of humanitarian, social and economic training					
1	Physical education	1−4	288	5,3	8,0
2	Political science	7	108	2,0	3,0
3	Latin	2	72	1,3	2,0
Total for the cycle			***468***	***8,6***	***13,0***
2.1.2. Cycle of professional and practical training					
1	Introduction to core professional course	1	108	2,0	3,0
2	Histology and embryology of aquatic animals	3	108	2,0	3,0
3	Fish anatomy	4	108	2,0	3,0
4	Biological basis of fish farming	6	144	2,7	4,0
5	Research methodology in fish farming	8	144	2,7	4,0
6	Fish processing technology	7	144	2,7	4,0
7	Aquatic microbiology	4	144	2,7	4,0
8	Hydrology and meteorology	3	144	2,7	4,0

№	The name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
9	Hydrochemistry	4	144	2,7	4,0
10	Aquatic toxicology	5	216	4,0	6,0
11	Essentials of ecosystem modeling	6	144	2,7	4,0
12	Design of fish-breeding enterprises	5	144	2,7	4,0
Total for the cycle			***1692***	***31,3***	***47,0***
Chosen by university, total			**2160**	**40,0**	**60,0**
2.2. Disciplines chosen by students					
2.2.1. Cycle of humanitarian, social and economic training					
1	Religious studies	4	72	1,3	2,0
Total for the cycle			***72***	***1,3***	***2,0***
2.2.2. Cycle of professional and practical training					
1	Fundamentals of animal husbandry	6	108	2,0	3,0
2	Piscivorous birds and mammals	6	72	1,3	2,0
3	Technical equipment in fish farming	6	108	2,0	3,0
4	Bioresources of hydrosphere and their use	7	144	2,7	4,0
5	Fundamentals of fishery protection and fishery laws	8	144	2,7	4,0
6	Business Law	8	72	1,3	2,0
Total for the cycle			***648***	***12,0***	***18,0***
Chosen by students, total			**720**	**13,3**	**20,0**
Elective part, total			**2880**	**53,3**	**80,0**
Practical training			**360**	**6,7**	**10,0**
Degree examination			**360**	**6,7**	**10,0**
Total, according to the field of study			**8640**	**160**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.
**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Brief description of disciplines "Ukrainian language (for professionals)," "History of Ukraine", "History of Ukrainian culture", "Foreign Language", "Philosophy" can be found in Section 2.1.

1.2. Cycle of mathematical and natural science (fundamental) training

Applied Mathematics. This is a stand-alone discipline in curriculum; its basic provisions and methods are widely used in specific disciplines. The aim of this discipline is to teach students to apply mathematical methods and perform common calculations on personal computers (PC).

Computer and software engineering. The discipline introduces the students to the personal computer and teaches them to use it for solving problems associated with major disciplines. The discipline considers the structure of personal computers and operating systems; the basics of text and spreadsheet documents and statistical data analysis applications used to optimize them.

Biophysics. The discipline underlies general education and theoretical training of students. The course provides students with a wide knowledge of physics and biophysics fundamentals, studies the physical and physicochemical phenomena in biological objects, as well as fundamental processes forming the basis of wildlife.

The specifics of this course is determined by the need of studying the laws of physics that underlie any processes: physical characteristics and properties of the animal body (mechanical, thermal, electrical, magnetic, optical); effects produced on animals by a variety of external physical factors (light, sound, ultrasound, infrasound temperature, electric and magnetic fields, etc.), the ability of animals to perceive and respond to these factors.

Chemistry. This is a fundamental discipline of natural science taught to students with major in "Water Bioresources". It provides a theoretical basis for studying fish physiology, biochemistry, aquatic, feeding fish, fish genetics, basics of biometrics and other training courses taught to ichthyologists and fish breeders. The purpose of this discipline is to educate future professionals modern concepts of organic chemistry enabling them to acquire in-depth knowledge necessary for study and application of related disciplines. In addition, this discipline provides an understanding of the animal tissues' structure and chemical processes occurring in living systems.

Hydrobotanics. The discipline allows students to get acquainted with patterns of plants and vegetation as an essential bioenergy component of biosphere. By the end of their botanics classes the students will learn methods of independent work with a microscope, individual production of medicines as well as cellular, tissue, member and body level analysis, which has a considerable cognitive and practical importance. The aim of the botanics course is to teach students to work independently, not only in the laboratory but also in nature.

Zoology. The discipline focuses on morphology and anatomy of animals, their physiology and ecology, taxonomy and geographic distribution, location and role animals play in ecosystems and agrocenoses. It contains a fundamental base of knowledge about animals and is an applied discipline for ichthyologists, livestock experts and environment protection engineers.

Fundamentals of Ecology. The objective of teaching this discipline is to deepen the students' knowledge about the environment, generate in future specialists ecological thinking and perspective.

Hydroecology. The discipline examines ecological status of different water bodies in dynamics; establishes factors that cause seral changes in aquatic ecosystems; exposes major problems in the functioning of aquatic ecosystems of different types and ways of addressing them in conditions of human impact.

Hydrobiology. The discipline examines population of various reservoirs, environmental factors and general patterns of their effect on living organisms; the general laws applicable to life of populations and biomes; formation of water quality and biological productivity in aquatic ecosystems.

1.3. Cycle of professional and practical training

Ichthyology. This is a basic discipline for ichthyologists, fish breeders who study the structure of ichthyoid and fish, their origin and place among chordate animals; some components of fish living environment and their propagation in continental waters and oceans.

Occupational health. This is a normative discipline that is studied in order help the future master's degree students acquire knowledge about current status and issues of labor safety in the fishery sector in accordance with specialization of their major training. The discipline specifies organizational safety requirements and inter-sectoral safety regulations (NPAOP – Ukrainian Labor Protection Regulations) for implementation in fisheries enterprises safety management; creation and operation of labor protection services in businesses and enterprises; ways, methods and means of satisfying environment and safety requirements during technological processes in the fishery sector;

management decisions to prevent accidents, injuries and occupational diseases in the sector businesses.

Physiology of fish. The discipline studies specifics of functional activity of all body systems in different fish species at cellular, sub-cellular, tissue, member and body levels, which allows assessing the physiological status of fish under normal conditions and exposed to natural and anthropogenic factors. Physiology of fish introduces students to mechanisms regulating physiological functions of all systems that provide interaction between fish body and the environment.

Fish genetics. The discipline lays down basics of the science of heredity and variation. It plays a leading role in the study of many problems related to the essence of life and evolution. The discipline is a scientific basis for selection and breeding of plants, animals, fish, and microorganisms.

Genetics is necessary to understand the nature of fish immunity against pathogens and develop methods of genetic protection against them. The study of physical and chemical mutagens and their mechanisms is important for breeding work and genetic pollution of environment, protection of heredity in humans, animals and fish against harmful mutagenic action. Knowledge of the genetic information, ways of its implementation in ontogeny and the role of environment will help selecting conditions fostering most useful properties and higher productivity in fish.

Fish farming hydraulic engineering and basics of geodesy. In the course of professional training of qualified specialists the best practices of modern domestic fishery enterprises is used; the students get familiarized themselves with the structure of fish farms, production facilities, design and construction of hydraulic structures providing water for process purposes.

The objective of the discipline is to provide students with necessary knowledge about the design of hydraulic structures in fishery farms; designing, building and operating hydraulic structures; technical feasibility of fishery construction; current and capital repairs.

Breeding and selection of fish. The discipline is a combination of theoretical and practical knowledge about fish farming and breeding based on studies of contemporary breeding and selection; fish breeding; fish gene pool characteristics; study of the basic methods used to breed and rear replacement youngsters and make up breeding fish shoals; practical introduction to main fish breeding processes and methods.

Feeding of fish. The discipline provides future professionals with the basic knowledge about energy conservation, science-based technologies, storage and use of fish feed for achieving high efficient fisheries under conditions of economic activity.

Economics of fishery enterprises. The object of the study is the accounting system of Ukrainian fisheries. The discipline includes analysis of trends and issues in fish farms accounting. Particular attention is paid to methodological aspects and methods of fisheries recordkeeping, accounting regulations (standards), accounting policies, primary documents, registers, charts of accounts, conducting accounts in conjunction with industry characteristics, account classes, accounting of biological assets, cost accounting and calculation of aquaculture product prime costs, classification of production costs, accounting of fixed assets, accounting of leases, depreciation, inventories, accounting of current assets, accounting of cash funds, accounting of cash payments, long-term liabilities, accounting of labor costs and labor remuneration in fish farming industry, accounting of income and financial results in fish farms, off-balance sheet accounts, balance sheet items (assets, equity, liabilities), basic forms of financial statements (balance sheets, income statements).

Ichthyopathology. The discipline studies fish diseases of different nature; factors contributing to their occurrence; general pathology; epizootiology, parasitology and host defense mechanisms in fish; modern diagnostic techniques; basic veterinary and sanitary measures that are used in fish farming. Objective of the course is to teach students a

creative, integrated approach by using acquired knowledge and taking into account the environmental situation when solving fish health problems in natural and artificial fish communities.

Aquatic biochemistry. This is a basic discipline that helps students to get acquainted with basic concepts on proteins, lipids, carbohydrates, minerals, vitamins, enzymes, hormones, their biological roles in the body; the discipline is of considerable practical importance. The discipline is an objective foundation for modern fish farming and related industries. Mastering knowledge of aquatic biochemistry allows specialists to understand different biotechnological processes in aquaculture products' production and processing.

Life safety. The discipline focuses on common patterns of risks, their properties and potential impact on human life and health; methods of prediction, detection and identification of hazards and their effects on humans and the environment.

Fishing. The discipline is aimed at educating skilled professionals whose work is related the protection, cultivation and use of aquatic facilities.

During the program, students will gain knowledge about the most common fishing gear, materials necessary for their production, catching gear, main types and design features of industrial ships.

Aquaculture of natural reservoirs. The discipline provides knowledge about technological requirements that apply to mixed-use reservoirs for fishery purposes, to methods of building ichthyofauna and fish breeding biotechnology in these reservoirs. Future aquaculture production technologists require knowledge of this discipline to be able to intensify fish farming in rivers, lakes and reservoirs; improve technologies of artificial reproduction of valuable, rare and endangered species, facilitate the processes of fish species' natural reproduction and preservation of biodiversity in aquatic ecosystems.

Aquaculture of artificial reservoirs. The discipline examines the organizational structure of pond and industrial fish farms, biological basis of comprehensive intensification in aquaculture designed to increase biological productivity and fish productivity of reservoirs; technologies of cultivation facilities; production of planting material and marketable fish in warm-water and cold-water ponds and industrial aquaculture, taking into account systems, forms and cycles of fisheries management.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.1.1. Cycle of humanitarian, social and economic training

Political science. The discipline, which helps students build a system of logically completed basic knowledge about policies and adequate skills as the basis for development of political consciousness and political culture; the discipline acquaints students with the essence and genesis of political science as a discipline, its main issues and the current state of their solution.

Latin. The main objective of the course "Latin" is to teach students Latin terminology used in botany and zoology, open access to a free and conscious perception of biological nomenclature, which is an essential element in education of a full-fledged professional.

2.1.1. Cycle of professional and practical training

Introduction to core professional course. The discipline introduces students to the content of future professional work; prepares them to completely and thoroughly master the disciplines of science, professional and practical training cycles, as well as acquire knowledge and skills during their practical hands-on training. The discipline is harmoniously combined with other disciplines that make up the basis of theoretical and practical training, especially with hydrochemical, hydrobiological, ichthyological disciplines and their technological components.

Histology and embryology of aquatic animals. The discipline examines the structure and function of eukaryotic cells, their reproduction, structure and histophysiology of animal tissue; microscopic structure of body organs, their systems, apparatuses, development and structure of gametes, fertilization, early stages of embryogenesis in vertebrates.

Fish anatomy. This is a morphological discipline that studies the structure of the fish body and is essential for training of ichthyologist/ fish breeder. The study of anatomy lays down foundations of knowledge about the body structure of fish in terms of species and age factors; the main objective of the discipline is to provide students with knowledge about structure and patterns of ichthyoid and fish body in the light of causality and species specificity.

Biological basis of fish farming. The discipline is part of fish breeders' training and is meant to foster in students theoretical framework underlying the fish breeding processes considering environmental and biological characteristics of fish facilities, biological acclimatization, artificial reproduction of fish and intensification of fish-breeding.

Research methodology in fish farming. The discipline examines methodology of planning, organizing and conducting various types of research to obtain new theoretical knowledge and put it to practice in fish farming. The discipline helps students grasp basic principles of selection and recruitment in aquaculture facilities; basic methods of staging scientific experiments in pond fish farms as well as processing, systematization and generalization methods of research results and their patenting; procedures of drafting research reports.

Fish processing technology. The discipline learns a set of theoretical and practical knowledge about standardization of pond and ocean fish production and processing. The students acquire this knowledge by studying the current state of breeding, selection, pond fish farming and fish processing; properties of basic technological techniques: storing, freezing, drying, curing, smoking, canning and achieving qualitative indicators of semi-finished and finished fish products; methods for determining quality indicators.

Aquatic microbiology. The discipline examines the role microorganisms play in enhancing water quality of ponds and integrated industrial fish farms; aquatic feed and microbial bioindicators used in aquatic ecosystems to reduce pathogenic microflora pollution and assess their health status.

Hydrology and meteorology. The discipline studies the physical and chemical properties of water within the hydrosphere of the Earth and phenomena and processes that occur in it; explores circulation of water in nature and the impact of human activities; the value of the hydrological regime in aquatic organisms' vital activity; develops methods of groundwater management regime and water regime; meteorology is the composition and structure of atmosphere; its heat treatment; electric fields; optical and acoustic phenomena; circulation patterns of air masses; water exchange in the atmosphere and between the atmosphere and hydrosphere.

Hydrochemistry. The discipline examines the chemical composition of natural waters and artificial water bodies; the cycle of chemical elements in water ponds; patterns of temporal and spatial changes in chemical composition of water under the influence of biotic and anthropogenic factors and chemical processes shaping the quality of water.

Aquatic toxicology. The discipline examines the sources and ways of toxic substances' entry into the water, their migration, transformation and accumulation in aquatic ecosystems; the impact of toxicants on aquatic activity at level of individual organisms, populations and ecosystems.

Essentials of ecosystem modeling. The discipline introduces students to studying water as a living habitat of biological objects. It is applied in scientific biology and ecology studies of plants and animals, their breeding, feeding and behavior. Many types of aquatic organisms are studied for the effect produced by toxic chemical and biological substances from the environment.

Design of fish-breeding enterprises. In this discipline, the current experience in design and construction of fishery enterprises is used to show students the meaning of preparatory stages in survey and geology investigation work; allows them to establish the nature of soils in the location in the waterworks and the possibility of construction in this area (hydrogeology). Students are also taught the basics of groundwater regime and its changes during the construction of waterworks (geodesy); the future professionals are taught to retrieve the relief area for the construction of fisheries.

Discipline allows students to determine design stages and types; their sequence; composition of the studies; the need and scope at various design stages. It also considers preliminary design stage: feasibility study (FS) made to justify the need for economic and financial viability of fish farm construction.

2.2. Disciplines chosen by students

2.2.1. Cycle of humanitarian, social and economic training

Religious studies. The discipline considers a branch of human knowledge about patterns behind emergence and functioning of religious beliefs; explores the socio-historical nature of religion; mechanisms of its social ties with the political, economic and spiritual systems of society. Feature of the Religious Studies course is that religious beliefs correlate with subjective positions of individuals and the main task of Religious Studies is to study religion in terms of its cultural function.

The Religious Studies course enables students to substitute their arbitrary perspective of religion with a conscious one; helps them acquire better knowledge about achievements of world and national culture and develop a balanced attitude towards religious beliefs of others; consolidates humanistic values; the objective of this discipline is to promote social and moral improvement of society and individuals.

2.2.1. Cycle of professional and practical training

Fundamentals of animal husbandry. The discipline helps students master the basics of anatomy, physiology, breeding, feeding and housing of farm animals; basic production processes in cattle, horse, pig, rabbit breeding, beekeeping and fish farming.

Piscivorous birds and mammals. The discipline studies mammals and birds that are an integral part of the fisheries' ecosystem, which significantly affects its structure and condition. The discipline explores the features of biology; reproduction, feeding and the role of birds and mammals in regulating the number of fish, both natural and artificial reservoirs.

Technical equipment in fish farming. The discipline helps students acquire a theoretical base and practical skills in using qualified technological equipment of reproductive aquaculture systems; provides a general description of fish farming equipment; modes of operation; methods to calculate the amount of equipment required for specific production problems.

Bioresources of hydrosphere and their use. The discipline studies the amount, structure and localization of biological resources in hydrosphere; the laws of their formation; the possibility and extent of their use and reproduction as well as possible ways of using aquatic resources for food, feed, medical, industrial and other purposes.

Fundamentals of fishery protection and fishery laws. The discipline studies protection of aquatic resources, including fish and their habitats, legislative and regulatory framework and the use of fish resources; methods for determining violations in this area and ways to address the issues associated with the use of fish resources.

Business Law. This discipline relates to functioning of any enterprise in fishery sector. Objective of the course "Business Law" is help students master theoretical knowledge about the legal status of entities; features of contracts concluded by such enterprises; the legal regime of water facilities; the use of intellectual property rights in fishery sector.

The purpose of the course "Business Law" is to generate knowledge of legal regulations in the fishery sector.

2.4. EDUCATION AND RESEARCH INSTITUTE OF FORESTRY, PARK AND GARDENING MANAGEMENT AND LANDSCAPE ARCHITECTURE

Director - Doctor of Agricultural Sciences, professor
Petro Ivanovych Lakyda
Tel: (+38044) 527-85-28, E-mail: lakyda@nubip.edu.ua
Location: educational building №1, room 119

FORESTRY FACULTY

Dean - Candidate of Agricultural Sciences, associated professor
Oleksandr Petrovych Bala
Tel: (+38044) 527-84-22 E-mail: bala.@i.ua
Location: educational building №1, room 118

GARDEN-PARK MANAGEMENT AND LANDSCAPE ARCHITECTURE FACULTY

Dean - Doctor of Agricultural Sciences, professor
Serhii Borysovych Kovalevskii
Tel.: (+38044) 527-89-23, E-mail: s.kovalevsky@ukr.net
Location: Educational building № 1, room 67

Departments in charge of graduate training:
Landscape architecture and landscape construction:
Tel.: (+38044) 527-82-96E-mail: stplyt@yandex.ru
Head of the department - Candidate of Agricultural Sciences, associated professor OlhaVasylivna Zibtseva

Landscape gardening and floral design/phytodesign:
Tel.: (+38044) 258-47-27, E-mail: sp_fito_pzs@ukr.net
Head of the department - Doctor of Biological Sciences, professor
Serhii Yuriiovych Popovych

Dendrology and Forest Selection:
Tel.: (+38044) 527-85-18E-mail: dendrology_nubip@ukr.net
Head of the department - Candidate of Biological Sciences, associated professor
Oleksandr Myhailovych Kurdiuk

The Faculties organizes and coordinates the educational process of bachelors in the following specialties:

6.090103 "Forestry, Park and gardening Management"

Departments in charge of graduate training:

Forest biology and game management:
Tel: (+38044) 527-82-38 E-mail: biol_misl_kaf@ukr.net
Head of the department - Doctor of Agricultural Sciences, professor
Anatolii Fedorovych Hoichuk

Silviculture
Tel.: (+38044) 527-82-82, E-mail: levchenko@nubip.edu.ua
Head of the department - Doctor of Agricultural Sciences, professor
Anatolii Omelianovych Bondar

Forest reclamation and optimization of forest-agricultural landscapes
Tel.: (+38044) 527-82-37, E-mail: yukhnov@ukr.net
Head of the department - Doctor of Agricultural Sciences, professor
Vasyl Yuriiovych Yuhnovskii

Forest management
Тел.: (+38044) 527-83-70, E-mail: lakyda@nubip.edu.ua
Head of the department -Doctor of Agricultural Sciences, professor
Petro Ivanovych Lakyda

Forest inventory and forest regulation
Tel.:(+38044) 527-85-23, E-mail: aagirs@ukr.net
Head of the department - Doctor of Agricultural Sciences, professor
Oleksandr Anatoliiovych Hirs

Reforestation and afforestation
Tel.:(+38044)527-87-47, E-mail: fmbrovko@ukr.net
Head of the department - Doctor of Agricultural Sciences, professor
Fedir Myhailovych Brovko

6.051801 "Woodprocessing technologies"

Department in charge of graduate training: Technologies of woodworking:
Tel.: (+38044) 527-81-67, E-mail: opinchewskaya@mail.ru
Head of the department - Doctor of Technical Sciences, professor
Olena Oleksiivna Pinchevska

Bachelor
specialty in "FORESTRY, PARK AND GARDENING MANAGEMENT"
field of knowledge "Agriculture and Forestry"

Form of study	Limit of licensed number of students
Full-time	200
Part-time	225
Learning time	4 years
Credits	240 ECTS
Language of teaching	Ukrainian
Qualification of graduates	Bachelor of Forestry and Garden-Park Management

The concept of training

Forestry and garden-park management is the sector of the economy that deals with research, account and reproduction of forests, parks, gardens and public parks, protecting them from fires, pests and diseases, reforestation and afforestation, forest regulation, increasing of forest productivity, aesthetic, sanitary and hygienic conditions of plantings. It is a very important component of the economy of Ukraine.

Training of experts has following main objectives: improving environmental education, public awareness on forestry and garden-park management and removal of social stress regarding the methods and means of forestry management by informing the public about close to nature forestry, multiple use of forest resources, public involvement in solving forestry problems and consultation with local communities about decisions that have significant ecological, recreational and economic importance and can cause significant social resonance, training in the organization of forest and landscape management on the principles of close to silviculture, providing multifunctional forestry and landscape management and efficient, continuous and sustainable, multi-use forest resources, taking into account landscape and watershed principles of forest management, conservation of natural biodiversity at all levels - from the genetic one to the species, ecosystem and landscape, providing continuous, high-efficient implementation of plantings environmental, economic and social functions at local, national and global levels.

Practical training

The bases of practical training are educational, research, training and manufacturing laboratories of the Institute Departments and IP NUBiP Ukraine "Boyarka Forest Research Station," Trainig and Research Nursery of the Reforestation and Afforestation Department, Botanical Garden of NULES of Ukraine and leading Forestry Enterprises of the State Agency Forest Resources of Ukraine, Yalta NSC of Biology and Ecology of Subtropical Plants and Landscape Science of NULESU (Yalta, Crimea), MM Gryshko Central Botanical Garden, National Academy of Sciences of Ukraine; Fomin Botanical Garden; Corporation "Ukrzelenbud", CE "Kievzelenstroy" and regional trusts to maintain green spaces, regional and district communal enterprises of gardening.

Proposed Topics for Bachelor theses

1. Peculiarities of thinning and selection group cutting in pine stands of forestry enterprises.
2. Natural regeneration of Scotch pine.
3. Condition of forest fire protection in forestry enterprises and ways of its improvement.
4. The analysis of methods for determining the stock of mature spruce stands of forestry enterprise.
5. Harmful insects in the young pine forests in forestry enterprises and their forest values.
6. The analysis of the current condition of hunting fauna and ways to optimize the number of hunting lands in forestry enterprises.
7. The experience of plant growing material in a forest enterprise.
8. Current state and erosion control properties of protective forest plantation in the forestry enterprises.
9. Economic features of management activities in the forest enterprise involving private structures.
10. Project proposals concerning the reconstruction of green plantations in Kirovograd's park.
11. Project proposals with regard to the reconstruction of parks of landscape architecture memorial value.
12. Landscaping project of the school territory and kindergartens.
13. Dendrological evaluation of the existing assortment of gymnosperms and prospects to replenish the collection of decorative forms at the M.M. Gryshko National Botanic Garden.
14. Technological features of the forcing treatment of sorts Tulipa L. and Crocus L.
15. Peculiarities of reproduction of the German medlar tree using green cuttings.

Academic rights of Bachelors

Can continue their studies in the Master Program that can be associated with their undergraduate final work (Bachelor's Thesis), beginning to work on it from the second or third year in the following fields:

8.09010301 - «Forestry»
8.09010302 - «Game Management»
8.09010303 - «Garden-Park Management»

Or they can choose any other field of knowledge 1801 «Specific categories»:

8.18010010 - «Quality, standardization and certification»
8.18010018- «Administrative management»
8.18010020 - «Management of educational establishment»
8.18010021 - «Pedagogy of the higher school»

Spheres of Bachelors employment

After receiving a Bachelor degree graduates can be employed in forestry enterprises of the State Agency of forest resources, communal enterprises of gardening or landscaping, state and private game management farms and forestry research institutions.

Bachelors Program and Curriculum in Specialty «Forestry, Park and gardening Management»

№	The name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training*					
1	Professionally–oriented Ukrainian language	1	108	2,0	3,0
2	History of Ukraine	1	108	2,0	3,0
3	History of Ukrainian culture	1	72	1,3	2,0
4	Foreign language	1-4	180	3,3	5,0
5	Philosophy	2-3	108	2,0	3,0
6	Physical education **	1-4	288	5,3	8,0
Total for the cycle			***576***	***10,6***	***16,0***
1.2. Cycle of natural science (fundamental) training*					
1	Higher mathematics	1	198	3,7	5,5
2	Physics	2	216	4,0	6,0
3	IT Innovations	2	144	2,7	4,0
4	Biometry	4	144	2,7	4,0
5	General ecology	3	90	1,7	2,5
6	Genetics	3	126	2,3	3,5
7	Technical mechanics	2	72	1,3	2,0
8	Safety of Vital Activity	4	72	1,3	2,0
9	Descriptive geometry	1	108	2,0	3,0
10	Botany	1-2	216	4,0	6,0
11	Dendrology I	3	126	2,3	3,5
12	Forest pedology	3-4	216	4,0	6,0
13	Plant physiology	3	180	3,3	5,0
14	Geodesy	2	144	2,7	4,0
15	Nature reserve management	8	54	1,0	1,5
16	Meteorology	2	72	1,3	2,0
17	Chemistry	1-2	198	3,7	5,5
Total for the cycle			***2376***	***44,0***	***66,0***
1.3. Cycle of professional and practical training					
1	Forest phytopathology	5	126	2,3	3,5
2	Forest entomology	6	126	2,3	3,5
3	Silvics	5	162	3,0	4,5
4	Economics of forestry and garden-park management	7	144	2,7	4,0
5	Basics of labor protection	8	54	1,0	1,5
6	Forest selection	4	144	2,7	4,0
7	Forest zoology	3	126	2,3	3,5
8	Urban landscaping	6	108	2,0	3,0
Total for the cycle			***990***	***18,3***	***27,5***
Regulatory part, total			**3942**	**72,9**	**109,5**
2. ELECTIVE ACADEMIC DISCIPLINES («Forestry and Garden-Park Management»)					
2.1. Disciplines chosen by University					
2.1.1. Cycle of professional and practical training *					
1	Mechanization of forestry work	4-5	198	3,7	5,5
2	Fundamentals of hydrotechnical reclamation	4-5	126	2,3	3,5
3	Silviculture	6	162	3,0	4,5
4	Forest plants	6-7	288	5,3	8,0
5	Forest inventory	5-6	234	4,3	6,5
6	Non-timber forest resources	5	90	1,7	2,5
7	Timber transportation	6	54	1,0	1,5
8	Forestry fire science	8	54	1,0	1,5
9	Forest melioration	7	144	2,7	4,0

10	Merchandising technique in Forestry	6	108	2,0	3,0
11	Earth remote sensing	4	90	1,7	2,5
12	Microbiology	5	54	1,0	1,5
13	Basics of construction	5	54	1,0	1,5
14	Organization of Forestry Production	8	180	3,3	5,0
15	Dendrology II	4	144	2,7	4,0
16	Accounting in Forestry	7	90	1,7	2,5
17	Fundamentals of forest exploitation	8	108	2,0	3,0
18	Basics of biotechnology	8	54	1,0	1,5
19	Radiobiology	4	72	1,3	2,0
20	Forest Management	7-8	216	4,0	6,0
Chosen by university, total			**2520**	**46,7**	**70,0**
2.2. Disciplines selected by the student					
2.2.1. Cycle of the social and humanitarian training *					
1	Economic theory	5	108	2,0	3,0
2	Politology	8	72	1,3	2,0
3	Jurisprudence	7	108	2,0	3,0
4	Sociology	7	72	1,3	2,0
5	Psychology	8	54	1,0	1,5
Total for the cycle			**414**	**7,6**	**11,5**
2.2.2. Cycle of the professional training *					
1	Fundamentals of professional training	1	72	1,3	2,0
2	Hydraulic engineering structures in forestry	7	126	2,3	3,5
Total for the cycle			**198**	**3,6**	**5,5**
Chosen by students, total			**612**	**11,2**	**17,0**
Elective part, total			**3132**	**47,9**	**87,0**
Practical training			**864**	**16,0**	**24,0**
Degree examination			**180**	**3,3**	**5,0**
Total, according to the field of study			**8640**	**160,0**	**240,0**
2. ELECTIVE ACADEMIC DISCIPLINES («Garden-Park Management»)					
2.1. Disciplines chosen by University					
2.1.1. Cycle of professional and practical training *					
1	Plant nurseries and seeds	5	126	2,3	3.5
2	Landscape inventory	6	126	2,3	3.5
3	Mechanization of GPM	4	144	2,7	4.0
4	Recreational Silviculture	6	144	2,7	4.0
5	Decorative dendrology	4	216	4,0	6.0
6	Fundamentals of fine arts	4	126	2,3	3.5
7	Landscape Architecture	6-7	216	4,0	6.0
8	Floriculture	5-6	198	3,7	5.5
9	Lawns	6	108	2,0	3.0
10	Landscape construction	7-8	216	4,0	6.0
11	Basics of floristics	5	54	1,0	1.5
12	Basics of city planning	5	108	2,0	3.0
13	Hydraulic structures of gardens	5	90	1,7	2.5
14	Fundamentals of biotechnology	7	72	1,3	2.0
15	Landscape graphics	5	108	2,0	3.0
16	Decorative plants in greenhouses	7	108	2,0	3.0
17	Inventory of garden-park management	7	90	1,7	2.5
18	Fundamentals of afforestation	8	90	1,7	2.5
19	Park gardening establishment	8	72	1,3	2.0
20	Urban ecology and phyto-melioration	8	72	1,3	2.0
21	Topiary art	8	72	1,3	2.0
22	Basics of composition	8	72	1,3	2.0
23	Introduction and adaptation of decorative plants	8	72	1,3	2.0
24	Biological protection of decorative plants	7	72	1,3	2.0
25	Engineering equipment in GPM	7	72	1,3	2.0

26	Radiobiology	6-7	54	1,0	1.5
Chosen by university, total			**2448**	**45,3**	**68,0**
2.2. Disciplines chosen by students					
2.2.1. Cycle of humanitarian, social and economic training*					
1	Economic theory	5	108	2,0	3,0
2	Politology	8	72	1,3	2,0
3	Jurisprudence	7	108	2,0	3,0
4	Sociology	7	72	1,3	2,0
Total for the cycle			***360***	***6,6***	***10,0***
2.2.2. Cycle of professional and practical training *					
1	Principles of professional training	1	72	1,3	2,0
Chosen by students, total			**432**	**7,9**	**12,0**
Elective part, total			**2680**	**53,3**	**80,0**
Practical training			**1080**	**20,0**	**30,0**
Degree examination			**180**	**3,3**	**5,0**
Total, according to the field of study			**8640**	**160,0**	**240,0**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP..

**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Description of the disciplines " Professionally-oriented Ukrainian language," "History of Ukraine", "History of Ukrainian culture", "Foreign Language", "Philosophy", "Physical Education" see at Section 2.1.

1.2. Cycle of natural science (fundamental) training

Higher mathematics. Elements of analytic geometry. Linear Algebra. Calculus. Differential calculus of functions of one variable. Integration. Functions of several variables. Differential equations and series.

Chemistry. Theoretical foundations of Chemistry. Organic Chemistry. Stoichiometric laws. Structure of atoms, kinetics of chemical reactions. Solutions. Oxidation-reduction reactions. Electrolysis. Corrosion of metals, features of main chemistry elements. Classification of organic compounds. Classification of cations and anions. Action of group reagents, features of the division into groups. Reactions. The analysis of unknown substances. Methods for determining the concentration of solutions. Fundamentals of neutralization, permanganatometry. Determination of related substances in solution.

Physics. Mechanics, kinematics and dynamics of point and solid. Molecular physics and thermodynamics. Electrostatics. An electric current and electromagnetism. Oscillations and waves. Optics. Elements of quantum mechanics. The structure of the nucleus. Radioactivity. Effect of radiation on biological objects.

Informatics. Hardware and software of computers. Personal computers. The system software. Programming languages. Algorithmic and programming tasks. Solving problems on PC.

Biometrics. Fundamentals of the theory of probability. Numerical characteristics and patterns of distribution of a random variable. Statistics. The simplest model analysis of variance. Correlation analysis. Selective methods as a basis for obtaining the forest information.

General ecology. Theoretical foundations of ecology. The doctrine of the biosphere. Ecosystem and biogeocoenosis. Trophic chains. Pollution. Forestry production and its environmental impact. Cost-effectiveness of environmental measures.

Technical mechanics. Statics, kinematics, dynamics. Strength and deformation of wood under different types of loading. Elements of lifting equipment.

Safety of Vital Activity. Common patterns of occurrence and development of emergencies. Their properties, the possible impact on human life and health. Safety in emergencies. Organization and management of life safety.

Descreptive geometry. Orthogonal projection. Axonometry. Projection drawings. Form, sections and cross sections. Sketches and working drawings. Elements of structural connections. Assembly drawing. Detailing.

Botany. Structure, activity and plant diversity. The lower and higher plants, their origin, phylogenetic relationships, the value for the national and forest management. Morphology and productivity of forest biocenosis, their sustainable use and conservation.

Dendrology. Ecology of plants. Type, intraspecific systematic unity. Types of habitats. Life forms and cycles. Phylogenetic system. Dendroflora of Ukraine. Introduction of plants. Phytocenology. Forest formations and associations.

Genetics. Hybrid method. Cytological and molecular basis of heredity. Chromosomal and cytoplasmic heredity.

Forest soil science. Soil formation processes. Mineral and organic parts of the soil. The pattern of distribution of soils in Ukraine. Soil properties according to vegetation.

Plant physiology. Physiology of plant cell. Water exchange of plants. Photosynthesis. Respiration. Mineral nutrition .Growth and development of plants. Ripening of fruits and seeds. Adaptation of plants and their resistance.

Geodesy. The general concept of geodesy, orientation of lines on the ground; coordinates in geodesy, making measurements with theodolite, ways to determine the area of land; geometric leveling, engineering design for profile, leveling the surface, terrain, topographic map, range maps, solving a topographic map; basics of aerial photography and interpretation of aerial photographs, topographic and geodesy works in forest inventory.

Meteorology. The influence of meteorological factors on the growth and development of plants, taking them into account during forest operations. Influence of wood on some meteorological parameters and climatic regime of terrain.

Nature reserve management. The concepts, the task of environmental education, basic directions, forms and methods of natural-guarding propaganda based on natural protected areas, ecological trail as a method of environmental education, training and recreation, environmental movement, religion and nature protection.

1.3. Cycle of professional and practical training

Forest Phytopathology. Pathogens of seedlings, plants, seeds, pine needles, leaves and symptoms of their manifestation. Root and stem rot. Eatable and poisonous mushrooms. Methods and ways of forest protection. Technology of the forest protection.

Forest entomology. Biology, taxonomy and classification of insects. Environmental factors and trophic relationships. Methods of plantations protection. Needles and leaf-eating, stem pests. Seeds, nurseries, young plantations and wood pests.

Silvics. Sivics as a theory about the forest nature. Biology, morphology, typology and ecology of the forest. Reproduction, development and growth. Practical silviculture. Systems and methods of cuttings. Intermediate cuttings. Increase of forest productivity.

Economics of forestry and garden-park management. The Law of demand, offers, cost and competition. Production and resource potential under conditions of a market economic system. Formation of the gross national product in the state regulation of the economy development.

Basics of labor protection. Legislation on safety and security protection. Principles of occupational health and industrial sanitary. Providing first medical care. Ensuring healthy working conditions in forestry

Forest selection. Methods of selection. Selective inventory of plants. Selection of main forest species.

Forest zoology. Species composition and peculiarities of forest fauna spreading, results of people's impact on forest fauna, examples of positive and negative effects of mammals and birds on forest environment, understanding the causes of animals extinction and methods for their preservation, the foundation of legislation to protect wildlife.

Urban landscaping. The role of vegetation in creating the environment. Design of landscape. The technology of landscape construction. Landscaping villages and towns. List of woody plants for landscaping.

2.1. Disciplines chosen by University

2.1.1. Cycle of professional and practical training (Specialty:"Forestry")

Basics of hydrotechnical reclamation. The theoretical bases of hydrotechnical reclamation of forest lands, irrigation of forest nurseries and plantations. Sources of irrigation, salinity and measures to control it. D rainage by means of open channels and horizontal drainage system. Use of moisturizing drainage-systems and special drying methods.

Mechanization of forestry work. Structure of different machines used in forestry such as tree planters and others. Machines for the protection and preservation of the forest. The mechanization of thinning the forest. Information about machine and tractor units.

Silviculture. Practical silviculture. Systems and methods of cuttings. Thinning. The forest productivity increase.

Forest plants. Significance and organization of forest plant nurseries. Peculiarities of plant material cultivation. Planting seeds and seedlings and their maintenance. Cultivation of basic valuable tree species. Technology of artificial forest plantations.

Forest inventory. Inventory of forest trees and wood products. Forestry inventory signs and structure of stands. Methods for determining wood increment and tree growth. Inventory of forests. Basic approaches to non-timber forest resources inventory.

Forestry fire science. Forest pirology examines the basic theory of combustion, fire hazard depending on the nature of the forest and weather conditions and classifies forest fires. We study fire prevention, the role of communication in operational fire detection techniques and tactics of fighting forest fires, estimation of losses from fires. Basic theory of combustion. Classification of forest fires. Preventive measures. Technical ways and tactics of fighting forest fires. Estimation of the damage.

Forest reclamation. Major forestry and agroforestry principles that determine the technology of establishment and cultivation of protective forest plantations. Soil erosion and the fight against it. Agrotechnical peculiarities of creation and cultivation of agroforestry plantations on eroded lands. Sands, their consolidation and economic development.

Microbiology. Microorganisms. Metabolism. Microbial preparations and fertilizers. Microbiology of water, air and feed. The morphology and chemical composition of viruses. Viral diseases of plants and their control

Organization of Forestry Production. Organization of production as an applied economic discipline. Forestry enterprises. Organization of work. Organization of the use of means of production. Organization of forest management, forest protection, reforestation, forestry activities. Effective planning of industrial activity. Financial support of production. Efficient analysis of industrial activity.

Dendrology. Ecology of plants. Species, intraspecific systematic units. Types of habitats. Life forms and cycles. Phylogenetic system. Dendroflora of Ukraine. Plants brought from abroad. Forest formations and communities.

Basics of forest exploitation. Cutting Fund. The main phases of forest exploitation. Organization of logging operations. Basics of wood processing theory. Methods for moving wood. Performance of cutting and wood processing machines and mechanisms.

Radiobiology. Properties of ionizing radiation. Radiobiological effects. Features of radionuclides in the biosphere. Safety measures when working with radioactive substances. Forest management under conditions of radioactive contamination.

Forest management. Forest management as a system of measures for forest inventory and forest management. Economic foundations of forest management in Ukraine. The division into categories of protection forests. The economic organization of forestry. Maturity of forest plantations. The organization of forest management. Inventory of forest resources. State registration of forests and state forest cadaster. Designing forest management during such types of work as the main timber harvesting, logging, reforestation and afforestation, etc. Designing forest management measures and their economic efficiency. Forest management techniques and their classification.

Accounting in Forestry. Discipline studies directly accounting records as a management function. The main elements studied are: a system of accounts, forms of record keeping, rendering of accounts, and a rule of double entry accounting as a basic record rule. It also deals with the audit.

Non-timber forest resources. The discipline studies methods of rational use of non-wood forest resources, ways to improve quality and productivity of grasslands, methods of harvesting, gathering and storing technology of forage, wild fruits, berries, mushrooms, herbs, birch sap. The discipline includes the basics of beekeeping.

Timber transportation. Discipline includes the following major sections: Technology of logging and harvesting, organization of transport operations in forestry; automobile, railway and water transport.

Merchandising technique in Forestry. Structure, composition, physical and mechanical properties of wood, how to modify them, wood defects, methods of drying timber and storage. Properties of wood products in forestry, sawmills, and special types of production (i.e. planing): standard dimensions, tolerances, allowances, sorting, measurement, calculation, labeling.

Earth remote sensing. Methods of remote sensing based on registration and further interpretation of the reflected solar radiation from the surface of the soil, vegetation, water and other facilities. Transporting (waftage) of recording device, into the air-Earth space allows you to get a much wider coverage area than ground-based research methods. The quality and applicability of the data (during remote sensing) are influenced by spectral range of shooting, spatial accuracy, radiometric accuracy, spatial coverage, efficiency and repeatability of shooting, and the cost of data.

Basics of construction. Production base of construction. Introduction to the discipline “Construction business”. Information, professional use of PC, principles of system analysis. Fittings for concrete structures, binders, Concrete and mortars. Thermal processes in the manufacture and installation of structures and materials; organization of production.

Basics of biotechnology. Microbial degradation and bioconversion. Technology and facilities of industrial biotechnology. Technology of culture media preparation and use of bioreactors. The principle of operation, equipment for monitoring and control of optimal parameters of biological feeds and feed additives using alternative raw materials.

2.1.2. Cycle of professional and practical training (Specialty "Garden-Park Management")

Plant nurseries and seeds. Planning activities for growing decorative plant material. Agrotechnical features of decorative woody plants cultivation as well as their propagating material. Organization of works in nurseries.

Landscape inventory. Methodological foundations, methods, and objects of landscape inventory. Principles of landscape-inventory measurements. Inventory of felled tree trunks volume. Inventory of wood products. Major landscape-inventory data of recreational forest stands and methods of their determination. Determination of growing tree stand stock . Inventory of the individual trees increment. Determination of forest stand growth. Inventory of recreational use forests. Peculiarities of aerial photographs use for landscape inventory.

Recreational forestry. The discipline considers the theoretical and practical basis of farming in the forests of recreational use. Attention is paid to applying differentiated farming in forests of different categories with purpose of different methods and types of cuttings in order to create healthy, economically valuable, aesthetically attractive and comfortable recreational forest plantations while maintaining their resistance to recreational effects. We consider the classification of forest and park landscapes, their aesthetic and hygienic properties. We study the succession of forest biocenosis provided various stages of recreational digression..

Decorative Dendrology. Discipline “Decorative Dendrology” refers to fundamental disciplines and is an integral part of the program training specialists in landscape management. Decorative Dendrology gives the opportunity to study morphological, biological and ecological characteristics of decorative woody plants and their use in landscaping. Studying decorative Dendrology, students use the knowledge they gained during the study of botany, soil science, physics, etc. After studying the discipline, students should take into consideration the range of woody plant species, to know the ratio of species to various economic factors.

Basics of Fine Arts. The course of studies on the subject "Basics of Art" is for second year students in the direction 6.090103 "Forestry and Garden-Park Management" and provides knowledge and skills to picture objects of landscape architecture.

Landscape Architecture. Within the discipline, the historical, social and city building aspects of landscape objects formation are studied. We give a historical overview of the development of landscape gardening styles and their impact on modern trends in landscape architecture. The theoretical bases and practical techniques of landscape design, including architectural planning and space making system for formation of park space, natural and artificial components in the construction of garden compositions are considered.

Floriculture. Discipline "Floriculture" involves the study of biological and ecological features of the development, propagation and cultivation of flower-ornamental crops unprotected soil, mastering theoretical knowledge of the growth and development of annual, biennial, perennial flowers and ornamental plants that are used to create different types of flower beds, gain practical skills with their propagation and planting in flower beds, flower beds drafting and passing them on objects SPB. The second part of the course provides the study of technology of growing crops in greenhouses under conditions of industrial production.

Lawns. The course deals with theoretical and practical aspects of the introduction of lawns, reveals in detail the classification of lawns, ecological and biological characteristics of lawn grass, methods of environmental assessment of lawn grasses and biological bases for selection of species for lawn. The discipline includes theoretical and practical principles of selection and seed production of basic types of lawn grasses in Ukraine and abroad, use of high-quality lawn grass seed.

Landscape construction. Landscape construction is an important part of the overall complex planning and urban development. It includes a range of diverse degrees of complexity issues associated with design, construction, exploitation of garden and park facilities, creation, formation and maintenance of their sensitive component - decorative plantings. Landscape construction is a complex set of activities that involves solving various agricultural, aesthetic, organizational, operational and commercial, economic problems, aimed at creating garden and park facilities for various purposes.

Basics of floristics. Students gain skills to create floral arrangements using live natural, canned or artificial plant material, while studying this subject. They are taught to use theoretical and practical knowledge in selection of plants, their preparation, preservation and modification. Particular importance is given to education of artistic and aesthetic taste, ability to operate freely in various styles and flower arrangements. In the course of the discipline students master the material composing the basic rules of composite solutions in European floral design.

Hydrotechnical structures of gardens. Discipline "Hydrotechnical structures of Gardens and Parks" involves the study of basic types and areas of application of hydrotechnical structures in gardens and parks, public acts governing the creation and maintenance of parks and gardens and waterworks, the foundation of hydrology, water-physical properties of soils and their definitions, the foundations of hydraulics and calculation of individual elements of landscape, engineering and technology used for irrigation and drainage, and more.

Basics of biotechnology. The discipline includes the study of methods of cell selection to generate stable against environmental stressors crop varieties, of biologically active substances, the problems of creating and practical application of genetically modified plants, their identification and diagnostics, especially the creation of modern collections of plant genetic resources - aesthetic aspects of plant biotechnology in practice economy.

Landscape graphics. The course of studies on the subject "Landscape Graphics" is designed for third-year student in the direction 6.090103 "Forestry and Garden-Park Management" and provides knowledge and skills for the competent execution of design solutions, organization of objects for gardens and green areas populated areas. Mastering the techniques, requirements and standards of graphic design that are used extensively in the performance of the graphics part of the project documentation and it is essential for training specialists in Forestry and Garden-Park Management.

Decorative plants in greenhouses. Discipline involves the study of the biological characteristics of growth and development of plants in subtropical and tropical regions of growth and areas with dry climates. The program includes study of 150 representatives from more than 80 species of genera that are members of 45 families. This is a normative

discipline in the field of "Forestry and Garden-Park Management", studied in semester 7 and which is an expanded version of knowledge acquired during the study of Botany, Dendrology and Floriculture, as it studies herbaceous and woody plants of the indicated above regions with high decorative features. This is a basic discipline before learning a course "Phytodesign of closed environment," which is taught in the third semester of graduate school.

Inventory of garden-park facilities. The legal framework aimed at developing garden and park facilities. Research and theoretical foundations of garden and park facilities. Organization and conduct inventory of garden and park facilities forest. Inventory of green spaces in cities and other settlements. Using inventory data garden and park facilities.

Basics of afforestation. The questions are related to the restoration of forests in urban landscapes. The principles of selection of forest stand types of different agricultural techniques and the purpose of their creation and growth are examined.

Organization of Garden-Park Management. Management of Garden-Park business. Fundamentals of Garden-Park Management Planning. Organization of landscaping design in cities and towns. The organization of construction in GPM.. Methods of labor groups management.

Urban ecology and phytomelioration. Discipline provides studying of patterns of urban areas and theoretical bases of cities ecosystems optimization. Urban ecology compared to other ecological disciplines, reveals the impact of urbanization on the environment, changes in urban landscapes and promotes environmental knowledge. The most effective ways to protect urban areas from adverse natural events and anthropogenic impact.

Topiary art. Discipline includes studying the history of topiary art, topiary art elements (hedges, borders, walls, bosquets, green cabinets, trellis with espalier, mazes, alleys, etc.). The study of growing technology and hedges laying. Features of reshaping plant forms and sculptural cutting. Study of making frames technology (for plants).

Basics of Composition. Within the discipline basic theoretical issues and practical skills are given that are used in all artistic fields. Mastering ways of harmonizing environment and application of key species and the laws of composition in the design will help future professionals to use them as a basis in the creative process of contemporary landscapes.

Biological protection of decorative plants. The course studies the major disciplines of biological protection of plants from pests, diseases and weed control; identifying the species of pests, diseases and weeds; knowledge of their development and measures of their control; development of toxic object phases.

Introduction and adaptation of decorative plants. Introduction and adaptation of plants has great theoretical and practical significance. Students are introduced to the theoretical and practical aspects of the introduction of plants while studying the discipline; they gain skills and methods of successful introduction. Besides, bioecological characteristics of woody plants in the introduction are considered.

Engineering equipment of garden-park facilities. In the training course “Engineering equipment of garden-park facilities” the issue of artificial landscaping garden and park facilities have been studied in detail, which are based on projects of horizontal and vertical layout integration, so the structure of the landscape is resolved for solving architectural and artistic as well as engineering-technical challenges faced by professionals of Landscape Architecture. At the same time students will study methods and ways of placing pipelines, laying underground and utilities on the ground.

Basics of urban development. Academic discipline has been developed to inform students about the basics of urban planning and place of landscape planning in its structure.

2.2. Disciplines chosen by students

2.2.1. Cycle of humanitarian, social and economic training

Economics. Basic macroeconomic terms. Laws of social production, the market and the mechanisms of its functioning, commodity-money relations, fundamentals of entrepreneurship, land rent.

Politics. Laws, structure and functions of political science. Power and power relations. The political system of society, the role and place in her state. Political consciousness and political culture. Politics and national relations. National and state development of Ukraine.

Jurisprudence. Discipline that is based on a system of scientific knowledge with the different branches of legal science. Legal science is one of the oldest social sciences. In fact, the emergence of legal science is associated with the emergence and development of law and the first information about the state and law.

Sociology. The social nature. Formation of human behavior in the workplace activity and his place in the motivation system and the means of social control. The role of staff members and a small group in achieving production.

Psychology. The purpose and main objectives of the course is to introduce psychology as a science that studies the psychological patterns of decision-making, methods of optimal use of knowledge about the structure of the individual, group dynamics, how accurate mastering, restoration and interpretation of the basic concepts of psychology in management, an effective competition and the application of management skills.

2.2.2. Cycle of professional and practical training

Geographic information systems (GIS) in forestry. Modern computer systems. Methods for the collection, transmission and use of information. Industry data banks. Modern geographic information systems. Geographic coordinate system. Fundamentals of Database. Structures and data model. Technology data entry .The analysis of spatial data. The system for collecting and processing data - Field-Map.

Principles of professional training. Discipline acquaints students - especially freshmen studying at the university, with the rights and duties of university students, history of the Forestry faculty of the National University of Life and Environmental Sciences of Ukraine, internal rules of the institution, organization of educational process, forms of training according to the curriculum, the hygiene of mental work and general rules of the work with a book and in the library. Emphasis is placed on the study of traditional features of separate discipline groups, which are taught at the faculty.

Bachelor
in specialty «WOODPROCESSING TECHNOLOGIES»
field of knowledge «Woodworking»

Form of education	licensed number of students:
– full-time	50
– part-time	150
Learning time	4 years
Credits	240 ECTS
Language of teaching	Ukrainian
Graduates qualification	Bachelor of woodworking technology

The concept of training

Specialists` training in the specialty involves the assimilation of knowledge and skills in developing the designs and technologies of wood materials and products manufacturing, the determination of their characteristics and quality level, mastering the techniques for analyzing the existing processes, planning and carrying out the researches aimed at optimization and woodworking industry improving processes. The basis of training is a systematic approach to the study of woodworking technology and forming students' ability to use rationally the equipment, wood and energy. Disciplines cover the theoretical and practical aspects of technologies of wood products manufacturing, trends of the woodworking technology, modern requirements for wood products, features of the modern woodworking machinery, new materials used in wood products manufacturing, new accessories, methods of the details dimensions calculations of the contemporary structural wood products, the design technologies development directions, requirements for furniture products, basics of artistic design, the main features of furniture styles, modern trends of the style solutions for the furniture products and the means of their implementation.

Practical training

The bases of the practical training are educational, scientific, educational and industrial laboratories of the Departments of the institute VP NULES of Ukraine "Boyarka Forest Research Station", as well as the leading forestry enterprises of the State Agency of forest resources of Ukraine and private woodworking enterprises.

Academic rights of Bachelors – the graduates can continue their studies on the Master Program according to the specialties the signs of which are placed in the curricula of undergraduate programs, beginning with the second or third courses:

8.05180101 - «Woodworking technologies»

Or on the specialties of knowledge sphere 1801 «Specific categories»:

8.18010010 – «Quality, standardization and certification»

8.18010018– «Administrative Management»

8.18010020 – «Management of the educational establishment»

8.18010021 – «Pedagogy of the higher school»

Spheres of Bachelors employment

After receiving the bachelor qualification the graduates can be employed in the forestry enterprises of the State Agency of forest resources, government and commercial enterprises of the production and sale of the construction materials, government and commercial woodworking and furniture enterprises.

Bachelors Program and Curriculum in Specialty «Woodworking technologies»

№	The name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. 1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training *					
1	Professionally–oriented Ukrainian language	1	108	2,0	3,0
2	History of Ukraine	1	108	2,0	3,0
3	The history of Ukrainian Culture	1	72	1,3	2,0
4	Foreign Language	1-4	180	3,3	5,0
5	Philosophy	2-3	108	2,0	3,0
6	Physical education **	1-4	234	4,3	6,5
Total for the cycle			***576***	***10,6***	***16,0***
1.2. Cycle of natural science (fundamental) training *					
1	Ecology		54	1,0	1,5
2	Physics		360	6,7	10,0
3	Higher Mathematics		378	7,0	10,5
4	Computational Mathematics and Programming		324	6,0	9,0
5	Chemistry (general and organic)		216	4,0	6,0
Total for the cycle			***1332***	***24,7***	***37,0***
1.3. The cycle of professional and practical training *					
1	Applied Mechanics (strength of materials, engineering).		288	5,3	8,0
2	Descriptive Geometry.		108	2,0	3,0
3	Engineering Graphics.		126	2,3	3,5
4	Safety of Vital Activity		54	1,0	1,5
5	Electro Technology And Electric Drive		126	2,3	3,5
6	Wood Science		162	3,0	4,5
7	Economy woodworking industry		162	3,0	4,5
8	Equipment Of The Woodworking		252	4,7	7,0
9	The Technology Of Wood Products		108	2,0	3,0
10	Technology Of The Sawmills And Woodworking Industries		252	4,7	7,0
11	Labor protection		108	2,0	3,0
12	Technology Of Wood Drying And Protection		252	4,7	7,0
13	Principles Heating Engineering		108	2,0	3,0
14	Principles Of Automation And AVP.		126	2,3	3,5
Total for the cycle			***2332***	***41,3***	***62,0***
Regulatory part, total			**4240**	**76,6**	**115,0**
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of professional and practical training					
1	Metrology, Standardization And Certification		108	2,0	3,0
2	Designing Wood Products.		108	2,0	3,0
3	Fundamentals of CAD Objects of Woodworking		108	2,0	3,0
4	Technology of Protective and Decorative Coatings		234	4,3	6,5
5	Protective Treatment Of Wooden Structures		90	1,7	2,5
6	Technology Of Furniture Products.		198	3,7	5,5
7	Technology Of Wood Panels		126	2,3	3,5
8	Organization Of woodworking industry		108	2,0	3,0
9	Fundamentals of Accounting and Auditing on woodworking enterprises		54	1,0	1,5
10	Technology Of Joinery		180	3,3	5,0
11	Macromolecular Chemistry		108	2,0	3,0
12	Technology Of Wooden House Building		288	5,3	8,0
13	Technology of glued materials and panels		144	2,7	4,0
Chosen by university, total			***1854***	***34,3***	***51,5***

2.2. **Disciplines chosen by students**					
*2.2.1. Cycle of humanitarian, social and economic training**					
1	Sociology		72	1,3	2,0
2	Economics		108	2,0	3,0
3	Jurisprudence		90	1,7	2,5
4	Psychology		54	1,0	1,5
5	Politics		90	1,7	2,5
Chosen by students, total			***414***	***7,7***	***11,5***
***2.2.2. Cycle of professional and practical training** *					
1	Computer Graphics		72	1,3	2,00
2	Management in the wood-processing enterprises		126	2,3	3,50
3	Principles of Marketing		108	2,0	3,00
4	Materials Science		108	2,0	3,00
5	Modifying of wood and wood-based materials		108	2,0	3,00
6	Principles of professional training		72	1,3	2,00
7	Technology Of Soft Furniture Products		144	2,7	4,00
8	Designing Of The Woodworking Enterprises		108	2,0	3,00
Total for the cycle			**846**	**15,6**	**23,5**
Elective part, total			**3114**	**57,6**	**86,5**
Practical training			**720**	**13,3**	**20,0**
Degree examination			**216**	**4,0**	**6,0**
Total, according to the field of study			**8640**	**160,0**	**240,0**

Annotations of disciplines in the curriculum

1. 1. Regulatory academic disciplines

*1.1. Cycle of humanitarian, social and economic training**

Annotations of disciplines " Professionally-oriented Ukrainian language," "History of Ukraine", "The history of Ukrainian culture", "Foreign Language", "Philosophy", "Physical Education" see section 2.1.

*1.2. Cycle of natural science (fundamental) training**

Ecology. Theoretical Foundations of Ecology. The doctrine of the biosphere. Ecosystem and biogeocoenosis. Trophic chains. Pollution. Forestry production and its environmental impact. Cost-effectiveness of environmental protection measures.

Physics. Mechanics and Dynamics. Kinematics of a point mass. The coordinate system. Movement of solids, deformation of bodies. The oscillatory motion. Molecular physics and thermodynamics. Electricity and magnetism. Optics, the physical nature of light, interference, diffraction, polarization of light.

Higher mathematics. Principles of mathematical analysis. The numerical sequence. Derivatives and differentials. Extremum of functions. Differential Equations. Analytic geometry in the plane and in space. Systems of algebraic equations. Matrices and determinants. Fundamentals of probability theory. Multiple correlation.

Computational Mathematics and Programming. Introduction. Basic definitions. Hardware. Software. Classification by type of software license. Modern information systems. Document preparation system. Working with documents. Word Processor Word. Working with spreadsheets. The concept of database basics of database management system MS ACCESS. Databases. Data Warehousing. Language SQL. Basics of algorithms. Development of algorithms for solving this problem. The history of

the origin and development of programming languages. Basic terms and definitions. Paradigms languages. Object-oriented programming. The programming language Visual Basic 6**.**

Chemistry (general and organic). Theoretical Foundations of Chemistry. Organic Chemistry. Stereometric laws. Structure of atoms, kinetics of chemical reactions. Solutions. Oxidation-reduction reactions. Electrolysis. Corrosion of metals, distinction of major elements chemistry. Classification of organic compounds. The laws and theories of organic chemistry. The main classes of organic compounds, their significance and distribution in nature. Organic constituents of wood, adhesives, resins and other binders.

1.3. Cycle of professional and practical training

Applied Mechanics (strength of materials, engineering). The objects studied in the discipline of materials strength, their calculation schemes, cross-sectional geometric properties, mechanical properties of materials and the laws of deformation, strength criteria, methods of calculation under static tension, compression, torsion, bending material, methods of calculations under dynamic load and elastic systems fluctuations.

Descriptive Geometry. The method of design. Central and parallel projection. The main properties. Surfaces. Classification. Determinant. Line. Fonts. Projection drawings. Sketches and drawings of parts.

Engineering Graphics. Straight line crossing above the surface area. Scan of surfaces. The single system of the design documentation. Drawings design. Scales. Formats. Lines. Fonts. Projection drawings. Sketches and drawings of parts.

Safety of Vital Activity. Common patterns of occurrence and development hazards emergencies. Their properties, the possible impact on human life and health. Safety in emergencies. Organization and management of Safety.

Electro Technology and Electric Drive. The laws of electrical engineering. Modern methods of electromagnetic processes calculation in electrical circuits and devices. Methods of analysis and synthesis of circuits with different parameters of the electricity sources and properties of circles elements.

Wood Science. Features of the micro-and macroscopic structure of wood. The chemical composition of wood and its use as a chemical raw. Physical and mechanical properties of wood required for the improvement of the existing and creation of new processes. Classifications of wood defects. Classification of forest products and their main characteristics.

Economy of woodworking industry. Subject, object, method and discipline task; the concept, the mechanism of formation and utilization of fixed and circulating capital. The state and economic analysis of technical equipment and technology. Theory of production, consumption, price, profit, profitability. Markets of resources, capital, labor, and finance. The basic laws of economics and mechanism of action.

Equipment of the Woodworking. Basic theories of wood cutting and wood materials, cutting as a workflow of the woodworking machines, wood cutting tools, general information about the hardware of the woodworking enterprises, functional constituent parts and mechanisms of the woodworking machinery, wood cutting machine for general purpose, special equipment of the woodworking industries.

The Technology of Wood Products. Principles of wood products construction taking into the consideration the current requirements of the technical aesthetics, rational consumption of materials and labor force and the technology of their production as a system of rules and methods of wood materials processing into the products based on the modern achievements of science, research and compilation of the best practices. Ways and methods of the technological problems solving at the up-to-date level with the use of research elements. Objectives and methods of products quality management.

Technology of the Sawmills and Woodworking Industries. Cutting-wood productions. Raw materials. Methods, technology and equipment for logs and timber sawing. Warehouses. Timber sorting. Waste recycling. Combination of raw materials use.

Labor protection. Systems of safety standards and occupational health, protection systems of the human body from: heat balance disorders, harmful effects of evaporation and gas, industrial dust, noise, vibration, electric current. Fire protection systems, safety systems at sites of the State Committee.

Technology of Wood Drying and Protection. The discipline studies the problems and stages of the design, the selection of wood drying methods, the selection of equipment for drying, the method for calculation of the performance of the wood drying chambers of the different designs, thermal and aerodynamic calculation of the wood dryers; performance of heat and circulation equipment, planning of the drying shops.

Principles of Heating Engineering. The main positions of the technical thermodynamics. Laws of theories of heat and mass exchange, methodology of the heat processes calculation occurring in thermal power installations of the different purposes, principles of operation and design of thermal systems, which are used in woodworking industry, means of the secondary and renewable energy sources use.

Principles of Automation and AVP. Principles of basic elements of automatic devices work, their advantages and disadvantages, applications. Principles of automatic control systems, management facilities properties.

2. Selective academic disciplines

2.1. Disciplines chosen by University

2.1.1. Cycle of professional and practical training

Designing Wood Products. Basic links between composition, structure and properties of metals, alloys, and regularities of their change under the influence of thermal, chemical or mechanical action, the main processes of metals and alloys processing. Regularities of various construction materials cutting with tools.

Fundamentals of CAD Objects of Woodworking. The objects studied in the discipline of materials resistance, their calculation schemes, cross-sectional geometric properties, mechanical properties of materials and the laws of deformation, strength criteria, methods of calculation of static tension, compression, torsion, bending, methods of calculations under dynamic load and elastic system fluctuations.

Technology of Wood Panels. Types and properties of adhesives for wood gluing with other materials. The processes occurring during the gluing and the possible ways of intensification. The essence of the processes of various types of glued products.

Technology of Glued Materials and Panels. Types and properties of adhesives for wood gluing with other materials. The processes occurring during the gluing and the possible ways of intensification. The essence of the processes of various types of glued products.

Metrology, Standardization and Certification. Subject involves: quantitative methods of quality and standardization assessment of timber and lumber, wood products, machinery and equipment, and certification of the woodworking processes, products quality control, technical measurement tools; responsibility for failure to comply with standards.

Technology of Protective and Decorative Coatings. Varnishes, paints, enamels, primers, putty. Adhesion and tension strength. Methods of coatings application and their curing. Technology and equipment for wood finishing. Calculation of equipment productivity.

Protective Treatment of Wooden Structures. History of wood impregnation industry, the purpose and technological objectives of wood protective treatment, wood properties that affect the processes of protective wood treatment, classification of fungi which damage the wood, types of wood rot, fungi development conditions; brief description of insects destructing the wood, characteristics of wood defects and injuries, preservatives, fire retardants, methods of round timber protection when stored on site of cutting and warehouses, rules of foundations making, floors of the first floor, walls, ceilings and wood roofs, basement waterproofing, preventive measures and the fight against the identified house fungi, classification of methods for wood impregnation, equipment for impregnation, transport and auxiliary equipment, autoclaves, safety rules while working with the protective substances, industrial sanitation rules on the wood impregnating plants.

Technology of Furniture Products. The discipline studies the design of chairs, armchairs, sofas, beds soft sprung and unsprung elements, materials used in their manufacture and test methods.

Technology of Joinery. The discipline studies the joinery characteristics, design, requirements, processes, preparation and work safety of the joinery production, wooden house building constructions characteristics, raw materials for the production of the wooden house-building, technology of manufacturing and installation of the wooden house-building, protection of elements of wooden houses from damaging agents and work safety while manufacturing the wooden house building.

Macromolecular Chemistry. The main classes of organic compounds, their significance and distribution in nature. Organic constituents of wood, adhesives, resins and other binders. Relationships between structure, properties and biological functions of organic substances and macromolecular compounds.

Technology of Wooden House Building. Subject contents: the current status of the wooden constructions production, wooden house building, architectural and planning decision and the design of wooden houses, types of walls, floors and roofs, carpentry in construction, carpentry on the building, the ways of increasing the durability of wood structures, mechanical testing methods, advanced products design and use of wood imitation, preparatory work before the production. The main objective of the discipline is the study of structures and requirements for the different wooden buildings, their production technology, rational and integrated use of raw materials, the study of the basic structural elements the wooden house is made of.

Organization of woodworking industry. Composition and structure of the woodworking industry. Organization and wages. Organization of wood processing. Planning and funding. Analysis of production.

Fundamentals of Accounting and Auditing on woodworking enterprises. The discipline that studies the forms of economic laws at the level of the individual entity. The course involves the study of the functioning of inputs to determine the effectiveness of investments in efficient operation under conditions a market economy, the development of creative approaches to reasoning and management decision-making and analysis of the economic efficiency considering as an example woodworking industry enterprise..

2.2. Disciplines chosen by students

2.2.1. Cycle of humanitarian, social and economic training

Sociology. The social nature. Formation of human behavior in the workplace activity and his place in the motivation system and the means of social control. The role of staff members and a small group in achieving aim of production.

Economics. Key macroeconomic terms. Objective laws of social production, the market and the mechanisms of its functioning, commodity-money relations, fundamentals of entrepreneurship, land rent**.**

Jurisprudence. Complex legal discipline that is based on a system of scientific knowledge with the different branches of legal science. Legal science is one of the oldest social sciences. In fact, the emergence of legal science is associated with the emergence and development of law and the first information about the state and law.

Psychology. The purpose and main objectives of the course is to introduce psychology as a science that studies the psychological patterns of decision-making, methods of optimal use of knowledge about the structure of the individual, group dynamics, how accurate mastering, restoration and interpretation of the basic concepts of psychology of management, an effective application of management skills.

Politics. Laws, structure and functions of political science. Power and power relations. The political system of society, the role and place in its state. Political consciousness and political culture. Politics and national relations. National and state development of Ukraine.

2.2.2. Cycle of professional and practical training

Principles of professional training. Formation and development of wood industry. Theoretical foundations of wood processing. Techniques and methods of wood materials processing.

Technology of Soft Furniture Products. We study the design of chairs, armchairs, sofas, beds soft sprung and unsprung elements, materials used in their manufacture and test methods.

Designing Woodworking Enterprises. Scientific basis of design, technological processes design, design of conveyor lines, designing the instrumental, fitter- mechanical and other service shops, the calculation of vehicles; ventilation, heating of wood processing and other shops, forest resources of Ukraine and ways of their use improvement. The tasks of the discipline is the study of the methodological, organizational and scientific bases of industrial buildings design, the bases of technological processes design in the production, composition and volume of the project work, methods of their implementation, composition of the main project-normative documentation, principles of the computer-aided design.

Computer Graphics. The course studies the effective work with documents in MS Word, the practical application of MS Excel spreadsheet (approximation of dependencies, analysis and optimization, linear programming tasks) schemes preparation in Visio system, the use of the statistical software package SPSS.

Materials Science. Parts of a tree. Wood science. Timber. Lumber. Wood properties. Wood defects. Paints and coatings.

Modifying Wood and Wood Materials. Structure, composition, chemical, physical, mechanical and technological properties of modified wood, raw material for the modified wood manufacture. Production and application technology of modified wood.

Forestry Commodity Research. Structure, composition, physical and mechanical properties of wood, way of their modifying, wood defects, timber drying and storage methods. Properties of production of forestry, sawmills, planning, special production: standard dimensions, tolerances, allowances, sorting, measurement, calculation, labeling.

Management in the wood-processing enterprises. The concept and nature of management. The history of management. Features managerial activities of woodworking enterprises. Basic theory of managerial decisions. Methods of management decisions. The functions of management and their implementation on woodworking enterprises. Principles

and methods of management. Leadership. Fundamentals of human resource management. Ethics and Culture Management.

Principles of Marketing. Socio-economic nature of marketing. Formation of the marketing mix. Impact factors of marketing environment on the activity of woodworking companies. Understanding consumer behavior in markets of different types. Marketing research as a basis for making marketing decisions. Functions of marketing. Analytic functions of marketing. Marketing product policy. Pricing. Marketing policy distribution. Marketing promotion policy.

2. 5. EDUCATION AND RESEARCH INSTITUTE OF VETERINARY MEDICINE, QUALITY AND SAFETY OF LIVESTOCK PRODUCTS

Director – Academician of the Ukrainian Academy of Agrarian Sciences, Doctor of Science (Biology), Professor Mykola I. Tsvilikhovskiy
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Adress: building № 12, room №324 "G"

FACULTY OF VETERINARY MEDICINE

Dean – Doctor of Sciences (Veterinary), Professor Prus Mykhaylo Petrovych
Tel.: (044) 527-82-98, E-mail: Prus.dean@nubip.edu.ua
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The faculty organizes and coordinates the educational process of bachelors in specialty:

6.110101 «Veterinary medicine»

Graduating departments:
Obstetrics Gynaecology and Animal Reproduction Biotechnology
Tel.: (044) 527-83-46, E-mail: guky@meta.ua
Head of Department- Doctor of Veterinary Sciences, Professor
Lubetskiy Vitaliy Josephovich

Veterinary-sanitary examination
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Head of Department - Doctor of Veterinary Sciences, Professor
Yakubchak Olga Mykolaivna

Epizootiology and organization of veterinary medicine
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Head of Department - Doctor of Veterinary Sciences, Professor
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Head of Department - Doctor of Veterinary Sciences, Professor
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Golopura Sergiy Ivanovych

Surgery. prof. I.O Povazhenka
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Acting Head of Department - Candidate of Veterinary Science, Associate Professor
Doroschuk Victor Oleksandrovych

Bachelor
in specialty "VETERINARY MEDICINE"
field of knowledge "Veterinary"

Form of education, licensed quantity:	
- full-time studies	250 persons
Duration of training	4 years
credits	240 ECTS
Language of training	English, Ukrainian
Qualification of graduate	Jr. doctor of veterinary medicine

The concept of training

According to the standard of education, introduced by the Ministry of Education and Science of Ukraine dated 07.02.2011, № 99 students studies discipline cycles of social and humanitarian training, fundamental, natural-scientific and general economic training and vocational and practical training. Graduate receives basic higher education and profession of junior doctor of veterinary medicine, who in production under the guidance of a doctor of veterinary medicine performs veterinary preventive measures that are aimed to prevent disease and death of animals, improve their productivity, quality and safety of animal products, provides preventive and diagnostic measures, treatment of animals, veterinary-sanitary examination slaughter products, ensures compliance of veterinary and sanitary regulations in housing, feeding and reproduction of animals.

Practical training

Bases of practical training students are educational, scientific, educational, scientific and industrial laboratories of basic institution of the University (Kyiv), its separate units, especially teaching and research farms of the University ("Velykosnitynske educational and experimental farm named by

O. Muzychenko, "Agronomic Research Station," Teaching and Research Farm "Vorzel" Nemishaivo Agricultural College), where laboratory and practical classes, tutorials and practical training of students are kept. In addition, the Department has bilateral agreements with private clinics which deals with small domestic animals, agricultural enterprises of different ownership forms, which are used as a base for practical training.

Academic rights of Bachelors

Graduates can continue their studies for Master programs on specialty, signs of which are placed in the curricula of of Bachelor programs, starting from the second course

8.11010101 - "Veterinary Medicine (by type)";

or specialties of field of study "Specific categories":

8.18010010 - "Quality, standardization and certification"

8.18010018 - "Administrative Management"

8.18010020 - "Management of Educational Institution"

8.18010021 - "Higher School of Pedagogy"

Spheres of Bachelors employment

Graduates with a degree from the Faculty of Veterinary Medicine junior doctor may be employed in enterprises, institutions and organizations, both state and other forms of ownership where they will carry out work in accordance with the acquired skills.

Bachelors Program and Curriculum in Specialty "Veterinary Medicine"

№	The name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training					
1	Ukrainian language (for professional purposes)	1	108	2,0	3
2	History of Ukraine	1	108	2,0	3
3	The history of Ukrainian culture	1	72	1,3	2
4	Foreign Language	1 - 4	180	3,3	5
5	Philosophy	2 - 3	108	2,0	3
6	Physical Education **	1 - 4	144	2,7	4
Total for the cycle			***576***	***10,6***	***16***
1.2. Cycle of natural science (fundamental) training					
1	Anatomy of domestic animals	1 - 3	252	4,7	7
2	Biochemistry of animals with the basics of physical and colloid chemistry	2 - 3	144	2,7	4
3	Cytology, histology, embryology	2 - 3	180	3,4	5
4	Bioinorganic Chemistry	1	72	1,3	2
5	Organic Chemistry	2	72	1,3	2
6	Biophysics	1	72	1,3	2
7	Animal physiology	3 - 4	216	4	6
8	Fundamentals of Biosafety, Bioethics and Veterinary Ecology	2	72	1,3	2
Total for the cycle			***1080***	***20***	***30***
1.3.Cycle of professional and practical training					
1	Veterinary Sanitation and Hygiene	3	72	1,3	2
2	Veterinary Microbiology and Immunology	3 - 4	144	2,7	4
3	Veterinary virology	5	108	2	3
4	Biotechnology in veterinary medicine	4	72	1,3	2
5	Physiopathology	4 - 5	144	2,7	4
6	Obstetrics, Gynaecology and Animal Reproduction Biotechnology	5 - 6	144	2,7	4
7	Veterinary-sanitary examination	7 - 8	108	2	3
8	Epizootology and infectious diseases	6 - 8	216	4	6
9	General and Special Surgery	6 - 7	144	2,7	4
10	Operative surgery, anesthesiology and topographical anatomy	4 - 5	144	2,7	4
11	Parasitology and invasive disease	6 - 7	144	2,7	4
12	Pathological anatomy and dissection	7 - 8	144	2,7	4
13	Inner diseases of domestic animal	6 - 8	216	4	6
14	Veterinary Pharmacology	5 - 6	144	2,7	4
15	Veterinary clinical biochemistry	7	72	1,3	2
16	Clinical diagnostics	4 - 5	144	2,7	4
17	The organization and economics of veterinary affairs	6	72	1,3	2
18	Veterinary toxicology	7	108	2	3
19	Latin	1	72	1,3	2
20	Occupational Health and Safety	3	72	1,3	2
Total for the cycle			***2484***	***46***	***69***
Regulatory part, total			**4140**	**76,6**	**115**
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of humanitarian, social and economic training					
1	Business Ukrainian language	1	72	1,3	2
2	Foreign Language	2	72	1,3	2
2.1.2. Cycle of natural science (fundamental) training					
1	Anatomical features of domestic animals	1	144	2,7	4
2	Botany	1	90	1,6	2,5

3	Zoology	1	90	1,6	2,5
4	Feeding of animals	4	90	1,6	2,5
5	Basics of breeding	3	90	1,6	2,5
6	IHistory of Veterinary Medicine	1	36	0,6	1
2.1.3. Cycle of professional and practical training					
1	Veterinary-sanitary examination	8	72	1,3	2
2	Veterinary radiobiology	4	72	1,3	2
3	Obstetrics, Gynaecology and Animal Reproduction Biotechnology	6	108	2	3
4	Epizootology and infectious diseases	6, 8	108	2	3
5	General and Special Surgery	6 -7	108	2	3
6	Parasitology and invasive diseases	6 – 7	108	2	3
7	Pathological anatomy and autopsy	7 – 8	108	2	3
8	Clinical diagnostics	4 – 5	108	2	3
9	Internal diseases of animals	6, 8	126	2,3	3,5
10	Veterinary Pharmacology	5 – 6	108	2	3
11	Veterinary toxicology	7	72	1,3	2
12	The organization and economics of veterinary affairs	6	72	1,3	2
13	Medicinal Herbs	2	54	1	1,5
14	Professional Ethics	5	36	0,6	1
15	Genetics in Veterinary Medicine	3	72	1,3	2
16	Management and Marketing in Veterinary Medicine	5	72	1,3	2
Chosen by university, total			**2088**	**38,6**	**58**
2.2. Disciplines chosen by students					
2.2.1. Cycle of humanitarian, social and economic training					
1	Politology		72	1,3	2
2	Culture Studies		72	1,3	2
2.2.2. Cycle of natural science (fundamental) training					
1	Anatomy of exotic animals		180	3,3	5
2	Computer science in Veterinary Medicinel		180	3,3	5
3	Methods for microbiological research		180	3,3	5
2.2.3. Cycle of professional and practical training					
1	Biotechnology of Animal Reproduction		144	2,7	4
2	Infectious diseases of small animals		144	2,7	4
3	Surgical Pathology of productive animals		144	2,7	4
4	Veterinary ophthalmology		144	2,7	4
5	Surgical diseases of small animals		144	2,7	4
6	Parasitic diseases of small animals		144	2,7	4
7	Parasitocenology		108	2	3
8	Fundamentals of forensic veterinary		144	2,7	4
9	Diagnosis and treatment of internal diseases of productive animals		144	2,7	4
10	Diagnosis and treatment of internal diseases of birds		144	2,7	4
Chosen by students, total			**2088**	**38,6**	**58**
Elective part, total			**4176**	**77,3**	**116**
Practical training			**756**	**14**	**21**
Degree examination			**72**	**1,3**	**2**
Total, according to the field of study			**8640**	**160**	**240**

Annotation of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Ukrainian language (the professional direction). Scientific terminology, terms and their usagethat are specific to veterinary specialty and playback previously acquired knowledge.

History of Ukraine. The study of the objective laws of the development of the Ukrainian state. The adoption of the Constitution of Ukraine, analysis of common problems of Ukraine's transition to a social market economy and integration into the world community.

The history of Ukrainian culture. Ukrainian mental culture as part of the global cultural process. The role of culture in the formation of identity in the lives of the Ukrainian people. Objective and subjective factors of growth of cultural norms at the present stage of Ukraine.

Foreign Language. A comprehensive study of language activities (reading, listening, speaking). Learn how to communicate and translate.

Philosophy. The system of philosophical knowledge of the main parts of philosophy which develops the type of consciousness that is based on the constructive-critical approaches to the ideals of humanism.

Physical education. Development of skills of physical education and health of the body.

1.2. Cycle of natural science (fundamental) training

Anatomy of domestic animals. The structure of the body of animals exists in close connection with its functions. The machine movement. Osteology. Syndesmology. Myology. Overall cover. Splanchnology. Digestive apparatus. Breathing apparatus. Urogenital. Angiology. Endocrine glands. The nervous system. Senses. Features of the anatomy of poultry.

Biochemistry of animals with the basics of physical and colloid chemistry. Physical and chemical properties of organic compounds and solutions. Structure, function and metabolism of proteins, fats, carbohydrates, amino acids, nucleic acids, vitamins, enzymes, macro-and micronutrients that constitute the basis of the structure of body tissues. Biochemical processes underlying the functional activity of certain organs and systems

Cytology, histology, embryology. Study of the cell. General embryology. Study of tissues. Histology of organs and systems.

Bioinorganic Chemistry. Chemical structure of matter, the basic theory of chemical processes, complex compounds. Chemistry of inorganic elements and their role in the life of the body, basis of chemical isotopes. Volumetric analysis, acid-base titration, redoksometria, physical and chemical analysis, photometry, chromatography.

Organic Chemistry. Structure, methods of production, physical and chemical properties, and use of the major classes of organic compounds - carbohydrates, alcohols, aldehydes, ketones, amines, acids, heterocyclic compounds. Properties of amino acids, carbohydrates, lipids, nucleic acids and proteins.

Biophysics. Physical and physico-chemical processes occurring in biological systems, the fundamental phenomena that form the basis of wildlife. Physical characteristics and physical properties of the body farm animals.

Animal physiology. Physiological processes in animals, including the physiology of blood, lymph, heart and circulatory, physiology of respiration, digestion, metabolism and energy, thermoregulation, excretion, endocrine physiology, reproduction, lactation, muscular and nervous systems, higher nervous activity analyzers.

Fundamentals of Biosafety, Bioethics and veterinary ecology. Fundamental properties (features) of life. Organism and the environment. Regularities of development and existence of the biosphere. Circulation of substances and energy in the biosphere. The structure of modern ecology.

1.3. Cycle of professional and practical training

Veterinary Sanitation and Hygiene. Learn sanitary and veterinary-sanitary requirements for environmental factors, livestock buildings, feed, water, soil, air and hygiene regulations and requirements for housing, feeding and maintenance of various types and age-sex groups of animals.

Veterinary Microbiology and Immunology. Taxonomy, morphology and physiology of microorganisms spread in nature, their role in the transformation of substances in nature. Influence of environmental factors on microorganisms. Infection. Immunology. Types and characteristics of pathogens: bacteria, bacilli, fuzibacteria and actinomycetes, mycobacteria, vibrio, spirochetes, mycoplasma, rickettsia and chlamydia, microscopic fungi.

Veterinary Virology. Physical structure and chemical composition of vibrios and viruses. Taxonomy, reproduction and cultivation of viruses. Effects on viruses of physical and chemical factors. Ecology of viruses. Genetics of viruses. Pathogenesis of viral diseases of animals. Features of antiviral immunity. Specific diagnosis and prevention of viral diseases of animals.

Biotechnology in veterinary medicine. Genetic and cellular engineering, Immunobiotechnology, Applied Biochemistry, Enzymology engineering, industrial engineering or microbiology. Transplantation of of embryos, early identification and regulation of gender of animals, cloning and transgenic reception, monozygotic and chimeric animals. Hybridoma technologies for monoclonal antibodies and their usage.

Pathological physiology. Common patterns of occurrence, development and completion of the disease. Nosology. The role of reactivity in pathology. Characteristics, classification of typical pathological processes of inflammation, growth disorders of tissues ,common disorders of regional blood circulation, metabolism, acid-base balance, thermoregulation, hypoxia, starvation. Adaptive-compensatory reactions in animal organism aimed to eliminate disorders. Pathological physiology of organs and systems.

Obstetrics, Gynecology and biotechnology of animal reproduction. Physiological basis and technique of obtaining sperm. Physiology and biochemistry of semen. The technology of artificial insemination of females and embryo transfer. Andrology. Physiology and Pathology of pregnancy, birth and the postpartum period. Operative Obstetrics. Obstetrical and gynecological check-ups. Diseases of the newborn. Diseases of the breast. Gynecology. Female and male infertility.

Veterinary-sanitary examination. The rules and methods of Veterinary evaluation of animal origin and foundation of technology and standardization of their production. Examination of slaughter products of healthy and sick animals, food poisoning and toxicity. The basic technology and hygiene of preserving, hygiene of production, veterinary and sanitary examination of eggs, milk and milk products, meat of wild animals, wildfowl, fish and marine mammals . Veterinary-sanitary inspection of food in the markets.

Epizootology and infectious diseases. Infection and Immunity. Evolution and classification of infectious animal diseases. Treatment and prevention of infectious diseases of ruminants, pigs, horses, birds, chicks, dogs and fur animals, bees and fish. Veterinary Sanitation. Diseases common to several species of animals and people.

General and special surgery. Veterinary traumatology. Surgical infection. Diseases of the skin, muscles, tendons, tendon sheaths and bursa, blood vessels, joints ,injuries of nerves and brain. Tumors. Diseases in the area of the head, neck, withers, back, and chest wall, abdomen, pelvis and tail. Andrologic disease. Veterinary Orthopedics .

Operative surgery, topographical anatomy and anesthesiology. The doctrine of surgery due to topographic and anatomical features of certain parts of the body of animals. Anesthesiology, fixation, and the overthrow of drug reassurance. Technology and organization of mass operations. Prevention of infections in the work of doctor of veterinary medicine. Injection and puncture. Desmurgy. Surgical operations on the parts of bodies of animals.

Parasitology and parasitic diseases. Appearance, evolution and extinction of parasitic diseases of animals. General Parasitology. Veterinary Helminthology, Entomology, Arachnology, protozoology.

Pathological anatomy and autopsy. Total pathanatomy. Death and postmortem changes. Compensatory and restorative processes. Inflammation. Imunomorphology and Immunopathology. Special Pathological Anatomy: diseases of the respiratory, digestive, cardiovascular, digestive and nervous systems. Diseases of the skin. Pathomorphology of infectious diseases. Sectional course. Forensic veterinary examination. Procedural part. A special part.

Internal diseases of animals. Internal diseases of farm animals, their etiology, pathogenesis, symptoms, course, diagnosis, treatment and prevention, laboratory studies. Diseases of young. Diseases of poultry. Diseases of fur-bearing animals, rabbits and dogs.

Veterinary Pharmacology. Pharmacodynamics of drugs. Conditions affecting on the action of drugs. Key features and pharmacokinetic characteristics of different groups of drugs, their dosage. Compounding technology and formulations.

Veterinary clinical biochemistry. Using of variety of biochemical methods for the study clinical conditions of animals, especially of their use in the study of certain organs and systems to determine exact diagnosis and development of treatment and prevention of diseases. Biochemical tests and symptoms (syndromes) metabolic disorders and other animal diseases.

Clinical diagnostics. Methods and peculiarities of the clinical studies of various animals, their use in the study of individual organs and systems, symptoms, syndromes and main stages of recognition of the disease. Special methods of research the conditions of separate organs and systems, detection of diseases in animals.

The organization and economics of veterinary affairs. Legislation on veterinary medicine in Ukraine. Organization and logistics of veterinary services and veterinary checks in regions, cities and farms. Planning, organization and economics of veterinary measures. Veterinary accounting, reporting and record keeping. The international veterinary organizations and veterinary services in some foreign countries.

Veterinary Toxicology. Toxicology of mineral poisons, phosphorus and chlororganic compounds. Organic derivatives of mercury. Toxicology of phenoloksyacids and phenol. Toxicology of poisonous substances vegetable and animal origin. Poisoning by poor quality animal feed. Chemical and toxicological analysis.

Latin. Latin grammar, spelling rules and specific terms of veterinary medicine.

Occupational Health and Safety. The theoretical bases of labor protection. The legal basis for the protection of employees breeding and veterinary services. Fundamentals of industrial hygiene. Safety in livestock and poultry. Fire safety in livestock and poultry.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.1.1. Cycle of humanitarian, social and economic training

Business Ukrainian language. Preparing students for oral and written business communication that involves working with various types of scientific and business documents. Working with special texts by profession.

2.1.2. Cycle of natural science (fundamental) training

Anatomical features of domestic animals. Studies the anatomical features of the structure and systems of domestic animals in conjunction of their organs and systems, interdependence of their structure and functions on the background of development in ontogenesis and phylogenesis.

Botany. Learn plant life, structure, diversity, geographic distribution, environmental cenotic features, biological and economic properties of plants.

Zoology. Studies the animal world from the simplest to the chordate animals, patterns of their occurrence and development of animal organisms, body composition, reproduction of different types of certain animals

Feeding animals. Scientific basis of feeding farm animals, feed and nutritional evaluation the needs of animals in the factors of complete feeding. The physiological significance of individual nutrients feedstuff and usefulness of the concept of nutrition, assessment of nutritional feed and rations.

Basics of breeding animals. Breeding farm animals. Livestock. Pig. Sheep. Poultry. Equine.

History of Veterinary Medicine. History of Veterinary in the primitive community, in Kievan Rus` principalities IX-XIV century, in Russia XVI11 and XIX century. History of veterinary medicine in the USSR. The current state of veterinary medicine in Ukraine.

2.1.3. Cycle of professional and practical training

Veterinary radiobiology. Biological effects of ionizing radiation. Radiation injury of animals. Radioecology and toxicology of radioactive substances. Radiological and veterinary-sanitary examination of objects under veterinary supervision. The use of ionizing radiation in animal husbandry and veterinary medicine.

Medicinal plants. Plant life of planet and Ukraine, medicinal and poisonous flora, rules gathering plants , technology of processing and recycling, chemical composition, pharmacological action, purpose, dosage form, dosage, indications and contraindications for use,

Professional Ethics. Morality and ethics. Functions of morality in the developmen of personality doctor of veterinary medicine. Deontology. Universal values and moral code veterinarian by supreme moral values. Laws of Ukraine and International Law on the basics of Professional Ethics doctor of veterinary medicine.

Genetics in veterinary medicine. Studies the the basics of heredity and variation in organisms, reveals the principles of storage, transmission and realization of genetic information, including cytological and molecular basis of heredity, the laws of inheritance , characteristics (disability, illness), linked inheritance, basic genetic engineering, population and clean lines, basic immunogenetics.

Management and marketing in veterinary medicine. Business plan: preparation and execution. The organization of the enterprise. Marketing operations.

2.2. Disciplines chosen by students

2.2.1. Cycle of humanitarian, social and economic training

Politology. Politics as a particular social phenomenon, Ukrainian political science, its main and dominant and Ukrainian political thought in general.

Cultural Studies. Ukrainian spiritual culture as part of the global cultural process. The role of culture in shaping the personality and life of the Ukrainian people. Objective and subjective factors the growth of cultural norms at the present stage of Ukraine establishment

2.2.2. Cycle of natural science (fundamental) training

Anatomy of exotic animals. Studies the of the structure of organs and systems of the exotic animals in conjunction of their structure and functions, and their development during ontogenesis and phylogenesis.

Methods for microbiological studies. Studies the modern laboratory methods for detecting and identifying bacteria, viruses and fungi on animal health and pathology, quality and safety.

2.2.3. Cycle of professional and practical training

Fundamentals of forensic veterinary medicine. Studies the complex of questions associated with the legal framework of a doctor of veterinary medicine. Covers the basics of the legal framework of Ukraine, features of forensic veterinary examination in case of death of animals caused by different reasons.

Biotechnology of Animal Reproduction. To form for a future doctor of veterinary medicine knowledge and skills in the physiology of animal reproduction, modern methods of identifying the optimal time of insemination, methods of obtaining semen from bulls and their evaluation insemination of females. Use and implementation of new directions of animal biotechnology (embryo transfer, sexing semen) in cattle.

Diagnosis and treatment of internal diseases of farm animals. Studies the clinical, instrumental and laboratory methods of research sick farm animals and identification of the cause, mechanism of development, clinical and morphological signs, course and treatment of internal diseases.

Surgical Pathology of productive animals. Studies the surgical diseases, patterns of development and general principles of treatment including places of localization of the pathological process in farm animals.

Veterinary Ophthalmology. Studies the etiology, pathogenesis, symptoms and diagnosis of lesions of the optic apparatus that violate the visual ability of animals and various methods and techniques of treatment.

Surgical diseases of small animals. Studies the surgical diseases, patterns of their development and general principles of treatment including the place of localization of the pathological process in small animals.

Infectious diseases of small animals. Studies the diseases that cause significant changes in animal organisms and lead to decrease of physiological and working skills of small animals, and not seldom causes death.

Parasitic diseases of small animals. Diseases of dogs, cats, rodents caused by worms, insects, mites, protozoa, of their course, diagnosis and treatment.

Parasitocenology. Disease, caused by several associations of pathogens, including bacterial and viral etiology.

2.6. UKRAINIAN EDUCATIONAL AND RESEARCH INSTITUTE OF BIORESOURCES QUALITY AND LIFE SAFETY

Director – doctor of biological sciences, professor, corresponding member of NAAS of Ukraine
Melnychuk Sergiy Dmitrovich
Tel: (+38 044) 527-86-39
E-mail – director@quality.ua
Location: educational building number 12, room. 315

FACULTY OF FOOD TECHNOLOGIES AND QUALITY MANAGEMENT OF AGRICULTURAL INDUSTRIAL COMPLEX PRODUCTION

Dean - Doctor of technical sciences, associated professor
Bal-Prilipko Larissa Vatslavivna
Phone: (+38 044) 527-89-509
E-mail : bplv@mail.ru
Location: educational building number 12, room. 305

The faculty organizes and coordinates the educational process of bachelors in specialty:

6.051701 "Food Technologies and Engineering"

Department in charge of training graduators: technology of meat, fish and sea products
Phone : (+38 044) 527-88-85
E-mail : t_lebskaya@ukr.net
Head of department - doctor of technical sciences, professor
Lebska Tatiana Kostyantynivna

Bachelor
in specialty "FOOD TECHNOLOGIES AND ENGINEERING"
field of knowledge "Food industry and agricultural production processing"

Form of training, licensed volume:	
- full-time study	100
- by correspondence	100
Term of training	4 years
Credits	240 ESTS
Language of training	Ukrainian
Qualification of graduates	Bachelor of food technologies and engineering

The concept of training

Successful practical solutions implementation of important problems of Ukraine in food raw materials processing is possible through training engineers in "Food Technology and Engineering" by educational qualification level "Bachelor".

The factors that determine the demand for specialists training in "Food Technology and Engineering" are: high quality traditional and new food products production increasing.

Practical training

Student's practical training is an indispensable part of the educational process by "Bachelor" qualification at training direction 6.051701 "Food Technology and Engineering". During the practical training, practical activities and skills, abilities and competencies foundations laides for future specialist of meat and fish processing industries.

During the bachelor educational period at the University, they passing four academic and two industrial practical training courses. All this practical courses different from each other by purpose, content and duration.

Proposed Topics for Bachelor theses

1. Workshop project for preserves production at OJ-S company " Fisherman Star" t. Kerch, AR Crimea.
2. Workshop project for dried fish production manufacturing at OJ-S company "Equator" Kharkiv region.
3. Workshop project for smoking sprat canning seafood manufacturing at OJ-S company "Prolive" t. Kerch, AR Crimea.
4. Workshop project for smoked fish products manufacturingn at OJ-S company "Sea Pearl" t. Kerch, AR Crimea.
5. Workshop project for pet canning feed manufacturing at OJ-S company "Sea Pearl" t. Kerch, AR Crimea. t. Kerch, Crimea.

Academic rights of Bachelors

According to Ukraine hight education standar, faculty graduates are qualified as Bachelor of Food Technology and Engineering.

Specialists are able to perform professional work, according to the occupations State classification DK 003-96:

Spheres of Bachelors employment

Specialist intended for work in meat and fish manufacturing sectors enterprises and related industries. After qualification receiving, graduates can work at agrarian sector food and processing enterprises.

Bachelors Program and Curriculum in Specialty «Food Technologies and Engineering»

№	The name of the course, practice	Semester	Amount		
			Hour	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training*					
1	History of Ukraine	1	108	2,0	3,0
2	Business Ukrainian (for professional purposes)	1	108	2,0	3,0
3	History of Ukrainian culture	1	72	1,3	2,0
4	Philosophy	2	108	2,0	3,0
5	Foreign Language	1, 2	180	3,3	5,0
Total for the cycle			***648***	***12,0***	***18,0***
1.2. Cycle of mathematical and natural science (fundamental) training*					
1	Higher Mathematics	1, 2	252	4,7	7,0
2	Physics	2, 3	198	3,7	5,5
3	Chemical fundamentals of food technology, including:	1, 2, 3, 4	1044	19,3	29,0
3.1	General and Inorganic Chemistry	1	216	4,0	6,0
3.2	Organic Chemistry	2	216	4,0	6,0
3.3	Analytical Chemistry	2, 3	180	3,3	5,0
3.4	Physical and Colloid Chemistry	3, 4	216	4,0	6,0
3.5	Biochemistry	3, 4	216	4,0	6,0
4	Informatic Sciences and Technology	1, 2	162	3,0	4,5
5	Technical Microbiology	4	144	2,7	4,0
Total for the cycle			***1800***	***33,3***	***50,0***
1.3.Cycle of professional and practical training *					
1	Engineering and Computer Graphics	1, 2	162	3,0	4,5
2	Heating engineering	4	72	1,3	2,0
3	Electrical Engineering	4	72	1,3	2,0
4	Overall food industry technology, including:	5, 6	720	13,3	20,0
4.1	Sugar manufacturing technology	5	72	1,3	2,0
4.2	Grain storage and processing technology	5	72	1,3	2,0
4.3	The bread, pasta, confectionery products and food concentrates technology	5	108	2,0	3,0
4.4	Milk and milk products technology	5	108	2,0	3,0
4.5	Fish, meat and meat products technology	6	108	2,0	3,0
4.6	Fermentation Technology	6	108	2,0	3,0
4.7	The technology of fats and fat mimetics	6	72	1,3	2,0
4.8	Canning fruits and vegetables technology	5	72	1,3	2,0
5	Standardization, metrology, certification and quality management	8	108	2,0	3,0
6	Food industries processes and apparatuses	4, 5	360	6,7	10,0
7	Production processes automatization	6	108	2,0	3,0
8	Student's research work	8	72	1,3	2,0
9	Food for health processing	7	90	1,7	2,5
10	Food Chemistry	4	72	1,3	2,0
11	Safety of Vital Activity	4	54	1,0	1,5
12	Polysaccharides technology and their applications in food industry	6	54	1,0	1,5
13	Fundamentals of labor protection	7	54	1,0	1,5
Total for the cycle			***1998***	***37,0***	***55,5***
Regulatory part, total			***4446***	***82,3***	***123,5***
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of humanitarian, social and economic training*					
1	Psychology and basics of sociology	3	72	1,3	2,0
2	Ecology	3	72	1,3	2,0

№	The name of the course, practice	Semester	Amount		
			Hour	Credits	
				National	ECTS
Total for the cycle			***144***	***3,2***	***4,0***
2.1.2. Cycle of mathematical and natural science (fundamental) training*					
1	Fundamentals of physiology and nutrition hygiene	6	72	1,3	2,0
2	Food enterprises hygiene and sanitation	6	72	1,3	2,0
Total for the cycle			***144***	***3,2***	***4,0***
2.1.3. Cycle of professional and practical training *					
1	Industrial construction fundamentals	6	72	1,3	2,0
2	University education	1	72	1,3	2,0
3	Processing agricultural enterprises industrial ecology	8	126	2,3	3,5
4	Food raw materials physico-chemical and biochemical processing fundamentals	4	117	2,2	3,25
5	Food production technology theoretical fundamentals	3	81	1,5	2,25
6	Mechanics of industry equipment and their reliability fundaments	3	108	2,0	3,0
Total for the cycle			**576**	**10,7**	**16,0**
Chosen by university, total			**864**	**16,0**	**24,0**
2.2. Disciplines chosen by student					
2.2.1. Cycle of humanitarian, social and economic training					
1	Legal Science	1	72	1,3	2,0
2	Political Science	3	72	1,3	2,0
3	Physical education	1, 2, 3, 4	216	4,0	6,0
Total for the cycle			***360***	***6,6***	***10***
2.2.2. Cycle of mathematical and natural science (fundamental) training*					
1	Information technology in engineering calculations industrial field of	5	90	1,7	2,5
2	Refrigeration processes physico-chemical and technological fundamentals	7	72	1,3	2,0
Total for the cycle			***162***	***3,0***	***4,5***
2.2.3. Cycle of professional and practical training *					
1	The industry branch technology	5, 6, 7, 8	576	10,7	16,0
2	The industry branch technological equipment	6, 7	180	3,3	5,0
3	The industry branch enterprises design	7	90	1,7	2,5
4	Process calculations, accounting and reporting	7	72	1,3	2,0
5	The industry branch products quality and safety control	8	126	2,3	3,5
6	The industry branch microbiology	7	90	1,7	2,5
7	The industry branch enterprises management with entrepreneurship fundamentals	6	72	1,3	2,0
8	The industry branch economics	7	90	1,7	2,5
9	The industry branch products commodity and packaging	8	72	1,3	2,0
Total for the cycle			***1368***	***25,3***	***38,0***
Chosen by students, total			***1602***	***29,7***	***44,5***
Elective part, total			**3384**	**62,7**	**94,0**
Practical training			**324**	**6,0**	**9,0**
Degree examination			**486**	**9,0**	**13,5**
Total, according to the field of study			**8640**	**160**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.

**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Abstracts of History of Ukraine, Business Ukrainian (for professional purposes), History of Ukrainian culture, Philosophy Foreign, Language look at chat. 2.1.

1.2. Cycle of mathematical and natural science (fundamental) training

Higher Mathematics. Determinants and equation's systems, functions, derivatives, integration methods, first and higher order differential equations, systems of differential equations, differential calculus application for functions and graphing the study

Physics. Physical principles of mechanics, molecular physics and thermodynamics fundamentals, direct current, electromagnetism, electromagnetic oscillations and waves.

General and Inorganic Chemistry. Substance's structure, chemical bonds types, chemical processes general patterns , the electrolytic dissociation and hydrolysis, oxidation - reduction reactions, the basic properties of chemical elements and their compounds.

Analytical Chemistry. Gravimetric analysis, titration analysis (acid-base interaction methods with complex formation) potentiometric method conductometry, polarography and amperometry, emission spectral analysis, luminescence.

Physical and Colloid Chemistry. Chemical equilibrium, phase equilibrium, chemical kinetics and catalysis, electrolyte solutions, electrica processes and electrical electromotive force, the structure of molecules, molecular spectra, intermolecular interactions, molecular - kinetic and optical properties of disperse systems, adsorption and surface phenomena, emulsions and foams, aerosols, structure and properties of macromolecular compounds.

Biochemistry. Relationship of organism metabolic processes; biochemical processes during storage and processing of food raw materials, types of fermentation (alcohol, propionic, butyric), the general patterns of metabolism, energy metabolism.

Informatic Sciences and Technology. Hardware and software of information processes, algorithmic and programming, software and computer graphics, the «Internet» application.

Technical Microbiology. The microorganisms relationship with each other and other organisms, microorganisms genetics and ecology, microbiological processes during food materials storage and processing, microbiological and hygienic production condition control.

1.3. Cycle of professional and practical training

Engineering and Computer Graphics. Design methods, curves on the surface, their practical application in the process equipment design, computer graphics, engineering design and construction computer applications.

Heating engineering. Heat exchangers, boilers, heating systems for food industry, environmental protection.

Electrical Engineering. Electrical machines, transformers, electrical lighting, power supply of food industry, saving electricity.

Overall food industry technology. Food assortment. Levels and trends in food industries of Ukraine and abroad. Composition, properties and quality of the vegetable and animal raw materials for food technology. Progressive technological schemes of food industries. Complex processing of raw materials in the food industry. Rational use of secondary resources.

Standardization, metrology, certification and quality management. Types of standards and procedure for their development and revision. State supervision and legal issues of standardization. Product quality, control over product quality. Certification. Metrological Service of enterprise. The concept of measurement and measuring instruments.

Food industries processes and apparatuses. Structure and main characteristics of modern equipment food enterprises and production processes, their parameters, which are used for food production.

Production processes automatization. Technological processes of food industry as objects of automation, automated process control systems, elements automatic control system design in the food industry, the application of personal computers in automated workplaces and maintenance of automated systems based on computer technology.

Student's research work. Theoretical studies and experimental testing, factor experiment, processing of the experimental data using mathematical statistics methods, basic of patenting, the technical solutions search process computerization.

Food for health processing. General characteristics and classification of foods for health. Characteristic of the basic principles and functional ingredients and functional foods creation methods.

Food Chemistry. The purpose of course study is to give for students fundamental knowledge of food raw materials and finished products chemical composition and properties, different additives and components functional - technological properties and their role in food quality forming.

Safety of Vital Activity. Common patterns risks occurrence and development, their properties and the possible impact on human life and health, forecasting methods, hazards detection and identification and their effecting on humans and the environment.

Polysaccharides technology and their applications in food industry. Academic discipline "Polysaccharides technology and their applications in food industry" is one of the most important subjects of professional and practical training. The purpose of discipline - to teach students to justify research and implement the best modern technological processes, to analyze production situation and to take appropriate decisions on processes implementation and development of manufacturing technologies and products.

Fundamentals of labor protection. System labor safety standards, scientific and technical documentation for safety, working safety instructions, the organization of the workplace.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.1.1. Cycle of humanitarian, social and economic training

Psychology and basics of sociology. Formation of knowledge. Stages of formation and development of personality psychology, personality psychology techniques, interpersonal relationships, group processes to reveal the main problems, concepts and socio-psychological phenomena

Ecology. Industrial Environment, energy and environment, natural environment monitoring, pollution sources and biosphere pollutants classification, environmental regulations, protection of air, water, biosphere.

2.1.2. Cycle of mathematical and natural science (fundamental) training

Fundamentals of physiology and nutrition hygiene. Basic theory of nutrition, hygienic characteristics of various food products, food additives, ways to increase food safety and food biological value.

Food enterprises hygiene and sanitation. Academic disciplines include the sanitation and hygiene basic problems study at the food factories: industrial premises, worckshops and lines, personnel health.

The problems of application of detergents and disinfectants, description of apparatus for sanitizing are styded.

2.1.3. Cycle of professional and practical training

Industrial construction fundamentals. Fundamentals of industrial engineering, production areas and the calculations. Sanitary engineering.

University education. Basic directions bachelor's food industry activity, the general concepts and information about food industry engineering and development, scientific information, the types and kinds of publications, libraries role in information storage and retrieva.

Processing agricultural enterprises industrial ecology. Ecology of food industry and food, energy and environment, monitoring of environmental pollutions, biosphere pollutants sources classification, environmental regulations, protection of air, water, biosphere.

Food raw materials physico-chemical and biochemical processing fundamentals. Biochemical and physico-chemical processes during raw materials storage and processing, the relationship between microorganisms and relationship with other organisms during storage of finished products, the general patterns of metabolism, energy metabolism.

Food production technology theoretical fundamentals. Basic concepts of food technology, chemical composition, functional and structural - mechanical properties of the main components of food raw materials, semi-finished and finished products, basic food process technology, and their relation to the basic sciences main provisions.

Mechanics of industry equipment and their reliability fundaments. General design principles of engineering and technology systems with a definite level of reliability. Interaction technological environments on manufacturing equipment parts durability and longevity. The choice of materials to ensure an adequate level of machines and devices reliability and food quality.

2.2. Disciplines chosen by students

2.2.1. Cycle of humanitarian, social and economic training

Legal Science. Study certain types of the legal regulation, legal environment, contractual relations and regulation management decision

Political Science. Discipline, which creates a system of logically students completed a basic knowledge of policies and adequate skills and knowledge as the basis for the formation of their political consciousness and political culture, acquaints students with the essence, the genesis of formation and development of political science as a science and discipline, its main issues and the current state of their solution.

2.2.2. Cycle of mathematical and natural science (fundamental) training

Information technology in engineering calculations of industrial field. Theoretical and practical training students on the use of information - research complex in food technology, providing access to modern information resources, effective tools and methods for creating, storing, processing and information transmitting.

Refrigeration processes physico-chemical and technological fundamentals. Refrigeration processes physico - chemical and technical foundations. Modern refrigeratory equipment in food industry, its sustainable use and the development of mechanization and automation.

2.2.3. Cycle of professional and practical training

The industry branch technology. The industrial branch structure. Products assortment. Nutrition and consumer properties of products, their organoleptic and physico - chemical characteristics. Manufacturing products from primary and secondary raw materials. Raw materials complex processing. Progressive methods of production. Product defects, and prevention methods.

The industry branch technological equipment. Modern industry equipment construction principles. Rational exploitation of modern equipment industry. Future development of mechanization and automation of production lines and streams.

The industry branch enterprises design. Fundamentals of food production processes. Selection process equipment. Drawings flowsheets specialty. Modern technological scheme of production.

Process calculations, accounting and reporting. During the study of discipline is expected to prepare future professionals for independent effective professional activity, perform basic raw materials, auxiliary materials and finished products calculations using computer technology, to use of knowledge for production processes implementation and optimization, the production situation analyze.

The industry branch products quality and safety control. Recording and quality control of raw materials at processing acceptance, finished products quality control. Determination of losses during raw materials transportation and primary processing. Determination in raw materials, semi-finished product moisture content, dry matter, pH, ash, proteins, fats, carbohydrates, vitamins.

The industry branch microbiology. Fundamentals of overall microbiology, causes, transmission and prevention of infectious diseases of fish. Microbial processes in the manufacture of fish-breeding products. Preventing microbial contamination of raw meat. Control of microbial composition and sanitary condition of equipment under different meats production technologies.

The industry branch enterprises management with entrepreneurship fundamentals. The organizational bases of enterprises. Main production organization. Scientific organization of labour. Salary rationing and the organization. Organization of material and technical maintenance.

The industry branch economics. General characteristics of the food industry economy. Fixed assets. Reproduction of fixed assets. Circulating means food industry.

The industry branch products commodity and packaging. Within course boundaries the following issues are studing:ways and methods of quality assessment, prediction of safety and security guarantees food consumption. Categories of merchandise, merchandising terms and definitions, the range of quality new types of foods and their harmonization in accordance with the international standard documentation.

2.7. TECHNICAL EDUCATION AND RESEARCH INSTITUTE

Director – Dr. Sc., Professor
Valeriy Dubrovin
Tel.: (044) 527-85-62, E-mail: vv_tech@ukr.net
Location: 11, educational building, 334, rooms

FACULTY OF AGROBIOSYSTEM ENGINEERING

Dean - Ph.D.,
Ivan Rogovskii
Tel.: (044) 527-85-34, E-mail: mechan_dean@twin.nauu.kiev.ua
Location: 11, educational building, 309, rooms

The faculty organizes and coordinates the educational process of bachelors in the following specialties:

6.060101 "Construction"

Graduating department:
Technology and Organization of Building
Tel.: (044) 527-85-78, E-mail: biult_chair@twin.nauu.kiev.ua
Head - Dr. Sc., Professor
Olexander Davydenko

6.070101 "Transport Technologies (according to the types of vehicles)"

Graduating department:
Transport Technologies and Equipment in Agrpindustrial Complex
Tel.: (044) 527-89-78, E-mail: transport_chair@twin.nauu.kiev.ua
Head - Dr. Sc., Professor
Volodimir Ivanyshyn

6.100102 "Processes, Machinery and Equipment of Agroindustrial Production"

Graduating department:
Mechanization of Animal and Systems Biotechnology
Tel.: (044) 527-85-35, E-mail: mechaniz_chair@twin.nauu.kiev.ua
Head - Dr. Sc., Professor
Gennady Golub

Reliability of Machinery
Tel.: (044) 527-87-71, E-mail: relability_chair@twin.nauu.kiev.ua
Head - Dr. Sc., Professor
Anatoliy Boyko

Technical Service and management of engineering by M.P. Momotenko
Tel.: (044) 527-88-53 E-mail: techserv_chair@twin.nauu.kiev.ua
Head - Dr. Sc.,
Valery Voytyuk
Occupational Safety and Environmental Engineering
Tel.: (044) 527-85-62 E-mail: vv_tech@ukr.net
Head - Dr. Sc., Professor
Valeriy Dubrovin

FACULTY OF CONSTRUCTION AND DESIGN OF MACHINES

Dean – Ph.D. (Technical Sciences),
Oleg Marus
Tel.: +38 (044) 527-81-29, E-mail: Marus_O@ukr.net
Location: building № 11, room 305

The faculty organizes and coordinates the educational process of bachelors in specialty:

6.050503 «Mechanical Engineering»

Diploma departments:

Designing of Tractors, Machines for Agriculture and Forestry;
Tel.: +38 (044) 527-88-95 E-mail: KovbasaV@ukr.net
Head of department – Doctor of Technical Sciences, professor
Volodymyr Kovbasa

Constructing of Machines
Tel.: +38 (044) 527-87-34, E-mail: machinebuild_centre@twin.nauu.kiev.ua
Head of department – Doctor of Technical Sciences, professor
Vyacheslav Loveykin

Mechanics and resistance of materials
Tel.: +38 (044) 527-83-25 E-mail:: strem_chair@twin.nauu.kiev.ua
Head of department – Doctor of Technical Sciences, professor
Mykola Chausov

Bachelor in specialty "CONSTRUCTION" field of knowledge "Building and Architecture"

Forms of Learning, licensed volume:	
– fixed-time	50
– correspondence	0
Terms of Learning	4 years
Credits	240 ECTS
Language of instruction	Ukrainian
Qualification graduate	Bachelor (Technical) in Building

The concept of training

Of knowledge, skills and professional skills of new generation in construction of agricultural and environmental systems based on modern standards of education adapted to requirements of the world's best educational programs for public and private sectors in Ukraine.

Practical training

Passing study (trial, geodesic) and industrial (vocational, technical, industrial enterprises) practices recommended by 52 companies, including strategic partners: John Deere Ukraine, Ukraine Amaco; Knauf Ukraine, Astra.

Proposed Topics for Bachelor theses

1. Project of construction of rural, agricultural and environmental systems.
2. The project of building fortifications agricultural and environmental systems.
3. Development of technology for building production facilities in rural areas, agriculture and environmental protection facilities.
4. Development of technologies for inspection and testing of buildings in rural areas, agriculture and environmental protection facilities.
5. Evaluation of properties of metals and materials in the construction of rural, agricultural and environmental systems.
6. The development process and rationale of building machines for specific production conditions.
7. The development process and rationale mechatronic systems construction equipment.
8. Evaluation of the technical work of building machines (by brand) with the development of the process of recovery.
9. Justification measures to prevent accidents and injuries in production processes in construction.

Academic rights of Bachelors

Can continue their studies in Master Program in specialties signs which are placed in the curricula of undergraduate programs, beginning with the second or third courses:

8.06010101 – «Industrial and civil construction" or field of knowledge 1801 "Specific categories":

8.18010010 – «Quality, standardization and certification";

8.18010018 – «Administrative Management";

8.18010020 – «Management of Educational Institutions";

8.18010021 – «Higher School of Pedagogy".

Spheres of Bachelors employment

Receives basic higher education and can work in positions that correspond to 3rd and 4th levels of qualification according to state of professions: head (another supervisor) district (division) in construction, Head of Logistics, Head of CAD managers (stewards) in construction, engineer in architecture and engineering, head of construction team, squad chief mechanical engineer of use of construction equipment, technical service engineer, civil engineer, building inspector and fire safety.

Bachelors Program and Curriculum in Specialty "Construction"

№	Name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training*					
1	Ukrainian language (for professional purposes)	1	108	2,0	3,0
2	History of Ukraine	1	108	2,0	3,0
3	History of Ukrainian Culture	1	72	1,3	2,0
4	Foreign Language (for professional purposes)	1-4	180	3,3	5,0
5	Philosophy	2-3	108	2,0	3,0
6	Physical Education	1-4	180	3,3	5,0
7	Economic Theory	5	72	1,3	2,0
8	Law	6	72	1,3	2,0
9	Sociology	6	72	1,3	2,0
10	Politology	7	72	1,3	2,0
Total for the cycle			***864***	***15,8***	***24,0***
1.2. Cycle of natural science (fundamental) training*					
1	Physics	1,2	198	3,7	5,5
2	Descriptive Geometry	1,2	198	3,7	5,5
3	Higher Mathematics	1,2,3	360	6,7	10,0
4	Applied Mathematics	4	108	2,0	3,0
5	Computers and Computer Technology	2	108	2,0	3,0
6	Chemistry	2	108	2,0	3,0
7	Theory of Mechanisms and Machines	3,4	144	2,7	4,0
8	Engineering Mechanics	2,3	234	4,3	6,5
9	Mechanics of Materials and Structures	3,4	234	4,3	6,5
Total for the cycle			***1692***	***31,4***	***47,0***
1.3. Cycle of professional and practical training *					
1	Engineering Geodesy (General Course)	2	108	2,0	3,0
2	Engineering Geology	3	54	1,0	1,5
3	Construction Materials	3	108	2,0	3,0
4	Construction machinery	4	108	2,0	3,0
5	Architecture of buildings and constructions	4,5	216	4,0	6,0
6	Electrical construction	4	54	1,0	1,5
7	Metrology and Standardization	4	54	1,0	1,5
8	Structural Mechanics	4,5	216	4,0	6,0
9	Water and Wastewater	5	108	2,0	3,0
10	Technology Building Production	5	108	2,0	3,0
11	Metal construction	5,6	144	2,7	4,0
12	Heat and Ventilation	6	108	2,0	3,0
13	Urban planning and transport	6	108	2,0	3,0
14	Bases and foundations	7,8	234	4,3	6,5
15	Production base of construction	7	108	2,0	3,0
16	Technology and Organization of Construction	7	108	2,0	3,0
17	Building construction	7,8	216	4,0	6,0
18	Reinforced concrete and masonry structures	7,8	216	4,0	6,0
19	Economics Building	7	54	1,0	1,5
20	Safety of Building	8	108	2,0	3,0
21	Organization of construction	8	108	2,0	3,0
Total for the cycle			***2646***	***49***	***73,5***
Regulatory part, total			**5202**	**96,2**	**144,5**
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of professional and practical training*					
1	Professional Introduction	1	54	1,0	1,5
2	Engineering structures	3	72	1,3	2,0
3	Metals and welding in construction	3	72	1,3	2,0

4	Fundamentals of design and construction business	5,6	144	2,7	4,0
5	Modern building materials	6	108	2,0	3,0
6	Construction of wood and plastic	6	72	1,3	2,0
Chosen by university, total			**522**	**9,6**	**14,5**
2.2. Disciplines chosen by students					
2.2.1. Cycle of professional and practical training					
1	Software engineering calculations	6	180	3,3	5,0
2	Inspection and testing of buildings	8	72	1,3	2,0
3	Seismology	8	72	1,3	2,0
4	Fundamentals of Design Automation in Construction	7,8	144	2,7	4,0
Chosen by students, total			**468**	**8,6**	**13,0**
Elective part, total			**990**	**18,2**	**27,5**
Practical training			**1080**	**20,0**	**30,0**
Degree examination			**288**	**5,3**	**9,0**
Total, according to the field of study			**7680**	**142,2**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.
**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Abstract disciplines "Ukrainian Language (for professional purposes)," "History of Ukraine", "History of Ukrainian Culture", "Foreign Language", "Philosophy", "Physical Education" see. Section 2.1.

Economic Theory. Formation solving skills of professional issues, formation of practical skills in organizational design, preparation of construction documents, financial management, etc., to train competent to make rational and informed decisions, analyze, generalize economic performance of construction organizations to defend their point of view for decisions, to discussion.

Law. Developing the knowledge of foundations of theory of law and key areas of law (constitutional, administrative, civil, financial, labor, international, etc.) assimilation methods of legal regulation of economy; clarify legal principles of business and economic activities.

Sociology. Forming holistic view of specifics of object and purpose of sociological knowledge of foreign history and sociology, prospects for its further development, skills acquisition and organization of empirical sociological research and practice effective use of their results.

Politology. Study of nature, theory and methodology of political science as science, development of skills of understanding political relations and processes, acquiring skills of practical application of theoretical, practical and instrumental components of political knowledge, analysis of international politics, geopolitical situation and political processes in Ukraine, its location, status and responsibility in modern political world.

1.2. Cycle of natural science (fundamental) training

Physics. Enhancing knowledge and understanding of phenomena and laws of nature that appear in classical and modern physics and related to their use in industry, technology and everyday life to environmental protection and life safety.

Descriptive Geometry. Formation of knowledge formation geometry, performance and reading technical drawings, construction images such as using computer graphics, geometric modeling to teach students facilities and processes, to provide them with knowledge and skills needed to perform and read drawings for various purposes as those carried out by hand or computer, and solving for pictures, drawings and models of geometric engineering problems.

Higher Mathematics. Formation of theoretical knowledge and practical skills in fundamentals of mathematical tools, main methods of quantitative measurement of random factors affecting any processes, principles of mathematical statistics, which is used during the planning, organization and management of production and technological processes.

Applied Mathematics. Formation of theoretical knowledge and practical skills in fundamentals of mathematical tools, main methods of quantitative measurement of random factors affecting any processes, principles of mathematical statistics, which is used during the planning, organization and management of production and technological processes.

Computers and Computer Technology. As required educational and professional program students should be able to: build complex drawings and axonometric images three-dimensional objects, solve problems on intsydentnist two geometric shapes (point, line, plane surface) to solve problem on intersection of two geometric figures (straight, plane surface) to find distance between shapes and angles between them, for given legal education to build projection points of curves and surfaces and cross sections to perform complex geometric figures, finding life-size oblique sections, to issue engineering and construction drawings for standards; know: principles and methods of projection images, positional methods for solving problems; metric methods for solving problems, methods of formation curves and surfaces; state standards.

Chemistry. Submit student basic theoretical questions in physical chemistry as well as basic concepts of Macromolecular Chemistry.

Theory of Mechanisms and Machines. To deepen students' knowledge of theoretical material about fundamental laws of nature on which calculation schema create needed in construction business, but also as means of education in construction skills for future scientific generalizations.

Theoretical Mechanics. To deepen students' knowledge of theoretical material about fundamental laws of nature on which calculation schema create needed in construction business, but also as means of education in construction skills for future scientific generalizations.

Mechanics of Materials and Structures. Forming students knowledge of strength of materials, geometric properties of plane sections, external and internal forces, method of sections, diagrams of internal forces, tensile and compressive strength, mechanical properties of materials, the calculation of the strength and stiffness at stretching and compression, basic theory of stress and strain state; strength criteria, displacement, torsion, bending, bending theory further questions, complex impedance, general theorems, elastic systems, common methods for determining displacements, statically undetectable system, calculation of plane curves beams, calculation of thick-walled cylinders and rotating disks, elements of the theory of thin shells, to calculate design by boundary conditions, the stability of compressed rods, elastic vibrations, strength of materials of re-variable stress, accounts for shock loads, contact stresses, fracture mechanics basis.

1.3. Cycle of professional and practical training

Engineering Geodesy (General Course). Learning contents and main directions of geodetic activities, mastering basic methods of surveying, geodetic surveys, development of surveying instruments.

Engineering Geology. Graphically display lithologic composition of rocks area, describe the terrain, perform analysis and assessment of current state of geophysical environment, perform long-term weather conditions and changes that occur in geophysical environments and forms of relief for a long time to carry out individual sections of engineering and survey reports in construction.

Building Materials. Study of fundamental properties of building materials and their changes in operating conditions, study range of building materials and their production technologies, study of relationship of features "structure - structure - property" as well as their patterns of changes in physics-chemical, physical, mechanical and other effects and to identify effective construction materials field functionality.

Construction Machinery. Forming students knowledge of modern construction machinery, equipment and power tool, learning basic types of design solutions and construction machinery and equipment, their use in industry, development of skills of self-selection sets of machines and equipment considering type of work and conditions of use.

Architecture of Buildings and Constructions. Develop students' creativity, their creative ideas can be realized only in material form in products and structures made of concrete materials to teach properly select materials for buildings on which building material is made in tree or rock, metal or concrete in monolith, depends on architectural appearance and design solution and cost, terms and conditions for use of building.

Electrical Construction. Forming students knowledge of electrical construction, linear range DC linear range of single-phase AC, three-phase current, transformers, electric machines DC machines AC, Low Voltage switchgear and relays, electrical measurements, choice of cross-section of wires and cables, rules Safety in electrical systems.

Metrology and Standardization. Preparation Bachelor-builder who needs to know metrological support of production and main methods and means of measurement in engineering practice and familiarize yourself with legal framework of metrology and statistical analysis and evaluation of measurement errors. Familiar with methods of measuring linear displacements and deformations by mechanical and electromechanical devices, methods of measurement of mechanical quantities using electrical transducers, methods of non-destructive quality control and testing of buildings and structures. Familiar with basics of standardization.

Structural Mechanics. Forming students knowledge of structural mechanics, kinematics analysis systems statically definable structure, movable load calculations, general theorem on elastic system, statically undetectable system, spatial rod systems, numerical methods for calculation of elastic metal structures; terms in calculation of strength of metal construction machinery, accounts for strength of metal structures of road vehicles beam type; calculations for strength metal frame type structures, lattice calculations of metal structures, metal structures calculated in form of beams, walls, plates and shells, estimates of strength of major components of cars, free vibrations of mechanical systems machines, forced oscillations, dynamics of problem is not oscillatory systems.

Water and Wastewater. Formation of future professionals with skills and knowledge of modern methods of design, construction and operation of water and wastewater systems populated cities, residential and industrial projects (basic provisions and requirements of state standards for water and wastewater systems, classification and basic characteristics of systems and schemes of water supply and drainage settlements,

residential and industrial projects, principles of selection and scheme water and wastewater facility; basic principles of sanitary equipment of buildings and structures, identifying the design parameters of sampling, preparation and filing of various water quality for water supply purposes, definition of estimated parameters of drainage and wastewater from different users).

Technology Building Production. To deepen students' knowledge of theory, and acquire skills to make independent technological and organizational solutions in matters installation of precast concrete structures, design technology and complex mechanization of assembly processes.

Metal structures. Forming students knowledge about elements of metal, mixed frames of industrial buildings – beams, girders, trusses, girders, columns, connections, etc.; sheet structures, which include large-diameter pipelines, storage capacity for liquids (tanks), gas (gas holders), granular materials (bunkers and silos), construction and installation of steel, refineries, chemical plants, energy facilities (protective shell and carrying domain, air, distillation columns, reactors, etc.), high-rise buildings – towers and masts line radio and Tellez communications, networks, power, drilling tower, surveying marks, smoke and vent pipes, construction road and rail bridges, viaducts companies, moving bridge structure, tower and gantry cranes, large excavators, hydraulic structures, etc.; multi-frame (tall) civic buildings; span roof construction of hangars, shops aircraft, shipbuilding and engineering, laboratories, public buildings (theaters, concert halls, markets, indoor stadiums, exhibition halls), other structures, which impose special requirements, eg related to space exploration, nuclear energy and so on.

Heat and Ventilation. Consolidate theoretical knowledge on properties of moist air, consolidate theoretical knowledge construction process heating and cooling with constant and variable moisture content, fixing basic assumptions of theory of heat transfer, familiarity with method of calculating value of thermal resistance of enclosing structures of buildings and determining heat loss room, determine estimated cost of heat for heating, ventilation and hot water, execution trace heating systems and selection of diameters pipelines heating system.

Urban Planning and Transport. Forming students urban world, understanding social significance of urban planning, and its dependence on natural, social and economic conditions and impact on people's lives. Addressing architectural and planning tasks and problems of engineering equipment reclaimed areas, improving transport system of city, including road network.

Bases and Foundations. Deepening knowledge of soil properties of different origin, composition and condition; better knowledge of soil properties change under influence of external factors, accounting contemporary theoretical developments in field of soil mechanics, accounting practices foundation of modern construction. The student should be able to: carry out selection framework to assess IHU construction site, type, construction and main dimensions of foundation, based on IHU construction site, perform calculations compatible bases and foundations as one of parts of building; create technical drawings on your PC using one of common graphics packages according to requirements of state standards, know: method for determining type of soil on basis of research and design characteristics of soil, Foundations of shallow and deep foundations lay, basis of calculation bases for boundary condition (I, II), requirements of national standards for design bases and foundations.

Production base construction. Learn basics of technology and manufacture of building materials, structures and products, identify areas of production base construction, to teach technical and economic parameters to perform selection process diagrams, raw materials and equipment.

Technology and Organization of Construction. Systematized knowledge about mastering technology and forms of construction, study of rational organization of construction site quality control system design and construction.

Building Construction. To acquaint students with basics of building: with individual products and design elements that are part of buildings, with appointment of structures and relationships between them, with the basic requirements that apply to structural elements of buildings and buildings themselves taking into account specific conditions of use.

Reinforced Concrete and Masonry Structures. Entry students knowledge of methods of calculation, design, construction and operation of concrete and masonry structures, taking into account requirements for reliable and safe operation, efficiency and environmental friendliness of these structures.

Economics Building. Formation of future professionals building management system specialized knowledge and practical skills in field of construction economics, planning indicators of industrial and economic activities, use of economic management construction company based on factors external and internal environment.

Safety of Building. Forming students' knowledge of legal and regulatory framework for occupational safety, government guarantees and conditions of labor, management and supervision of occupational safety and organization of production, training on safety, investigation and registration of accidents, occupational diseases and accidents; stimulation of labor and responsibility for its violation.

Organization of Construction. Gaining theoretical knowledge and practical skills that will be needed in practice. Interdependent system of training to perform certain types of work, installation and maintenance of general order on construction site, order and timing of works, supply all kinds of resources to ensure effectiveness and quality of certain types of work or construction projects.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.1.1. Cycle of professional and practical training

Professional Introduction. Introducing students to basics of building as integrated production process. Trace entire construction process from project work linked to area of construction, preparation and provision of necessary equipment is actually process of construction of modern technologies, streamlining construction area, construction of communication.

Engineering structures. To acquaint students with basics of building: with individual products and design elements that are part of buildings, with appointment of structures and relationships between them, with basic requirements that apply to structural elements of buildings and buildings themselves taking into account specific conditions of use.

Metals and Welding in Construction. Provide scientific principles and teach future professional bachelor properties of metals when used in technological processes of welding in construction industry.

Fundamentals of Design and Construction Business. Forming students knowledge about selection of effective design solutions for high-level design, general information about buildings and structures, their classification, basic concepts with definitions of basic requirements for buildings and their components, classification of construction and design of buildings and main provisions of unification, standardization

and modular coordination in building size, foundation and underground construction solutions foundations of buildings, designs exterior and interior walls of buildings to meet modern standards, requirements, classification and design solutions for ceilings, floors, roofs and roofs of buildings, foundation design of industrial single and multi-storey buildings, principles of choice of space-planning and design decisions related to functional purpose and placement processes, the formation of master plans.

Modern Building Materials. Formation of skills that allow you to make right choice of material based on operating conditions, provide cost savings in materials, weight and buildings, mastering theoretical basis of design.

Construction of Wood and Plastic. To teach students properly handled and hold works, use beams, purlins, studs, rafters, arches, frames, trusses, spatial span and special design.

2.2. Disciplines chosen by students

2.2.1. Cycle of professional and practical training

Software Engineering Calculations. Feasibility studies and calculations of different variant solutions design, research organizations for various kinds of design. Inspection and testing of buildings. Bachelor builders and engineers who have in-depth knowledge of methods and means of studying basic properties of building materials, study and evaluation of stress-strain state of structures, buildings and structures at all stages of process (from design to operation) are competent in organizing systems, application methods and means of nondestructive quality control of construction products, oriented in design scheme of buildings and structures, perfectly aware of methodology of experimental research, know and be able to apply the methods and tools appropriate measurements, capable of quality control in construction, carry out surveys and to test structures, buildings and structures to draw conclusions about their condition and possibility of further exploitation.

Seismology. Study of theoretical knowledge about causes of emergence, spread and effects of earthquakes in seismically active areas of country on basis of current research activity of earth's surface motion of tectonic plates and continents. Installation and determine effect of mechanical waves on construction sites of various designs. Study and application of modern methods of increasing seismic.

Fundamentals of Design Automation in Construction. Familiarization with basic computer programs with computer-aided design of building structures, review latest and most current software systems of calculation and computer-aided design, introduction of integrated tools in Windows operating system and MS Office, as well as in most of software programming language VBA for Applications.

Bachelor
in specialty "TRANSPORT TECHNOLOGIES (ACCORDING TO THE TYPES OF VEHILES)"
field of knowledge "Transport and Transport Infrastructure"

Forms of Learning, licensed volume:	
– fixed-time	100
– correspondence	100
Terms of Learning	4 years
Credits	240 ECTS
Language of instruction	Ukrainian
Qualification graduate	Bachelor (Technical) in Transport Technologies

The concept of training

Of knowledge, skills and professional skills in field of next-generation transport technologies in agricultural and environmental sectors based on modern standards of education adapted to requirements of world's best educational programs for public and private sectors in Ukraine.

Practical training

Passing study (trial, in management engineering) and production (professional, technical, production of transport companies) recommended practices at 89 companies.

Proposed Topics for Bachelor theses

1. Development (improvement) of traffic on street of settlement using elements of automated motion control system.
2. Developing sustainable international routes in vehicles transporting agricultural goods.
3. Development of transport and process crops for harvesting company (association management, etc).
4. Recommendations to improve safety of vehicles and pedestrians on road section on streets (avenue, square, etc.) locations.
5. Development of transport and production process for transportation of farm animals in enterprise (association management, etc).
6. Development of transport and production process for transportation of poultry in enterprise (association management, etc).
7. Development of transport and manufacturing process in reproductive material transporting livestock and poultry in enterprise (association management, etc).
8. Development of measures to improve use of vehicles in company.
9. Development of transport and production processes for transportation of agricultural products (milk and dairy products, bread and bakery products, etc.) in company.

Academic rights of Bachelors

Can continue their studies in the Master Programme in specialties signs which are placed in curricula of undergraduate programs, beginning with second or third courses:

8.07010102 - "Organization of Transportation and Transport Management (Road Transport);

8.07010104 - "Organization and Regulation of traffic" or field of knowledge 1801 "Specific categories":

8.18010010 – «Quality, standardization and certification";

8.18010018 – «Administrative Management";

8.18010020 – «Management of Educational Institutions";

8.18010021 – «Higher School of Pedagogy";

Areas of employment of graduates

Receives basic higher education and can work in positions that correspond to 3rd and 4th levels of qualification according to state of professions: logistics specialist, expert logisticians, technical specialist in management, transport operations inspector, safety inspector, inspector for safety and quality, head Transport Detachment, engineer vehicle use, technical service engineer.

Bachelors Program and Curriculum in Specialty "Transport Technologies (according to the types of vehicles)"

№	The name of course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training*					
1	Ukrainian language (for professional purposes)	1	108	2,0	3,0
2	History of Ukraine	1	108	2,0	3,0
3	History of Ukrainian Culture	1	72	1,3	2,0
4	Foreign Language (for professional purposes)	1-4	180	3,3	5,0
5	Philosophy	2-3	108	2,0	3,0
6	Physical Education	1-4	180	3,3	5,0
7	Economic Theory	5	72	1,3	2,0
8	Law	6	72	1,3	2,0
9	Sociology	6	72	1,3	2,0
10	Politology	7	72	1,3	2,0
Total for the cycle			***864***	***15,8***	***24,0***
1.2. Cycle of natural science (fundamental) training*					
1	Physics	1	108	2,0	3,0
2	Engineering and Computer Graphics	1	108	2,0	3,0
3	Higher Mathematics	1,2,3	360	6,7	10,0
4	Chemistry	2	108	2,0	3,0
5	Technical Mechanics	2	108	2,0	3,0
6	Computer Science and Programming	3,4	180	3,3	5,0
7	Dynamics of freight hauling vehicles	3	108	2,0	3,0
8	Probability Theory and Mathematical Statistics	4	90	1,7	2,5
Total for the cycle			***1170***	***21,6***	***32,5***
1.3. Cycle of professional and practical training *					
1	Vehicles	3	108	2,0	3,0
2	Overall rate of transport	4	108	2,0	3,0
3	Operations Research in transport systems	3,4	216	4,0	6,0
4	Fundamentals of theories and management	4,5	180	3,3	5,0
5	Fundamentals of theory of transport processes and systems	4,5	180	3,3	5,0
6	Environmental Ecology	6	54	1,0	1,5
7	Information Systems and Technology	5,6	180	3,3	5,0
8	Cargo Traffic	5,6	180	3,3	5,0
9	Passenger Traffic	6,7	180	3,3	5,0
10	Management and Marketing	6	108	2,0	3,0
11	Interaction of transport	6,7	216	4,0	6,0
12	Transport Economics	7,8	180	3,3	5,0
13	Transport Law	7,8	180	3,3	5,0
14	Logistics	8	108	2,0	3,0
15	Occupational Health and Safety	7,8	144	2,7	4,0
Total for the cycle			***2320***	***39,3***	***59,0***
Regulatory part, total			***4570***	***81***	***121,5***
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of professional and practical training*					
1	Statutory basis of police services	3	90	1,7	2,5
2	Conveying Machinery	4	108	2,0	3,0
3	Performance Features vehicles	4	54	1,0	1,5
4	Fuel and lubricants and other operating materials	4	108	2,0	3,0
5	Energy saving and renewable energy	4	90	1,7	2,5
6	Performance Features roads and buildings	5	90	1,7	2,5
7	Organization of Traffic	5	90	1,7	2,5

8	Hygiene transport of animals and animal products	6	108	2,0	3,0
9	Storage Technology to transport agricultural products	7	108	2,0	3,0
10	Transportation Planning System agribusiness	7	72	1,3	2,0
11	Ecological characteristics of traffic patterns	8	54	1,0	1,5
12	Technical Means of Traffic	7	54	1,0	1,5
13	Organization of International Road Transport	7	126	2,3	3,5
14	Technologically-transport processes in agriculture	8	90	1,7	2,5
15	Maintenance and repair of vehicles	8	108	2,0	3,0
16	Vehicle safety	8	54	1,0	1,5
Chosen by university, total			***1401***	***25,9***	***39,0***
2.2. Disciplines chosen by students					
2.2.1. Cycle of professional and practical training *					
1	Professional Introduction	1	54	1,0	1,5
2	Fundamentals of Transport Psychology	2	72	1,3	2,0
3	"Machine-biological area"	3	72	1,3	2,0
4	Fundamentals of customs legislation	4	72	1,3	2,0
5	Principles of criminology	6	72	1,3	2,0
6	Traffic Regulations	4	108	2,0	3,0
7	Examination of accident	4	54	1,0	1,5
8	Loads Science	5	72	1,3	2,0
9	Transport trasology	6	54	1,0	1,5
10	Basic research	8	72	1,3	2,0
11	Tariffs and tariff system	8	54	1,0	1,5
Chosen by students, total			**756**	**14,0**	**21,0**
Elective part, total			**2160**	**40,0**	**60,0**
Practical training			**758**	**14,0**	**24,0**
Degree examination			**288**	**5,3**	**9,0**
Total, according to the field of study			**7680**	**142,2**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.

**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

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Law. Developing the knowledge of foundations of theory of law and key areas of law (constitutional, administrative, civil, financial, labor, international, etc.) assimilation methods of legal regulation of the economy; clarify the legal principles of business and economic activities.

Sociology. Forming holistic view of specifics of object and purpose of sociological knowledge of foreign history and sociology, prospects for its further development, skills acquisition and organization of empirical sociological research and practice effective use of their results.

Politology. Study of nature, theory and methodology of political science as science, development of skills of understanding political relations and processes, acquiring skills of practical application of theoretical, practical and instrumental components of political knowledge, analysis of international politics, geopolitical situation and political processes in Ukraine, its location, status and responsibility in modern political world.

1.2. Cycle of natural science (fundamental) training

Physics. Enhancing knowledge and understanding of phenomena and laws of nature that appear in classical and modern physics and related to their use in industry, technology and everyday life to environmental protection and life safety.

Engineering and Computer Graphics. Formation of knowledge formation geometry, performance and reading technical drawings, construction images such as using computer graphics, geometric modeling to teach students facilities and processes, to provide them with knowledge and skills needed to perform and read drawings for various purposes as those carried out by hand or computer, and solving for pictures, drawings and models of geometric engineering problems.

Higher Mathematics. Formation of theoretical knowledge and practical skills in fundamentals of mathematical tools, main methods of quantitative measurement of random factors affecting any processes, principles of mathematical statistics, which is used during planning, organization and management of production and technological processes.

Chemistry. Submit student basic theoretical questions in physical chemistry as well as basic concepts of Macromolecular Chemistry.

Technical Mechanics. To deepen students' knowledge of theoretical material about the fundamental laws of nature on which creates computational schemes are needed in transport technologies, but also as means of education in future Transport skills in scientific generalizations.

Computer Science and Programming. As required educational and professional program students should be able to: build complex drawings and axonometric images three-dimensional objects, solve problems on intsydentnist two geometric shapes (point, line, plane surface) to solve problem on intersection of two geometric figures (straight, plane surface) to find the distance between the shapes and angles between them, for a given legal education to build a projection points of curves and surfaces and cross sections to perform complex geometric figures, finding life-size oblique sections, to issue engineering and construction drawings for standards; know: principles and methods of projection images, positional methods for solving problems; metric methods for solving problems, methods of formation curves and surfaces; state standards.

Dynamics of Freight Hauling Vehicles. To deepen students' knowledge of theoretical material about basic laws of dynamics freight hauling vehicles on which creates computational schemes are needed in transport technology, but also as means of educating future professionals in transport technology skills in scientific generalizations.

Probability Theory and Mathematical Statistics. Formation of theoretical knowledge and practical skills in basics of mathematical apparatus of theory of probability and mathematical statistics, main methods of quantitative measurement of random factors affecting any processes, principles of mathematical statistics, which is used during planning, organization and management of production and technological processes.

1.3. Cycle of professional and practical training

Vehicles. Forming students knowledge in field of transport, introduction to research and develop different types of vehicles. Characteristics, parameters and performance vehicles, their construction and operation features.

Overall Rate of Transport. Mastering concept of "integrated transport system", "integrated transport network", and acquisition of knowledge about importance of all modes of transport for timely and quality meet needs of industries and public in traffic, improve economic efficiency of transport system.

Operations Research in Transportation Systems. Formation of theoretical knowledge and practical skills formalize control problems in transportation systems using specialized optimization techniques.

Fundamentals of Theories and Management. Forming students knowledge of general methodology of focus, methods of systems theory and systems analysis, applied in management of organizations and decision-making relating to administrative, financial and operational problems of theory of targeted systems, their design and research focused on use of transport technology.

Fundamentals of Theory of Transport Processes and Systems. Formation conceptual apparatus Systemology, acquisition of knowledge about mathematical basis describing transport systems, modeling and analysis of their function within system approach, acquisition of necessary skills for applying knowledge to solve practical problems. Object of discipline is process of transport for passengers and goods, and resource support its operation.

Environmental Ecology. Form Bachelors transport profile outlook on major environmental issues of our time human impact on environment, environmental management and conservation, global ecological crisis and others.

Information Systems and Technology. Forming students knowledge of sustainable building modern information systems and technologies, and to develop skills to create databases using modern database management systems and data banks.

Cargo Traffic. Formation of students academic and professional expertise in organizing, planning and management of transportation of various kinds of cargo. Subject is process of cargo units, transport of goods from place of departure to places of consumption, and processes that ensure their implementation.

Passenger Traffic. Developing knowledge and understandings of conceptual foundations of organization and management of passenger traffic, acquiring skills in process control passenger traffic. Subject of discipline are techniques and methods of passenger traffic.

Management and Marketing. Formation of modern management thinking, basic system management organizations of all kinds making appropriate management decisions for future workplace. Forming student transport knowledge of theoretical foundations and practical skills of management and marketing.

Interaction of Transport. Study of main provisions of problem of integrated development and interaction between different modes of transport as integrated system. Subject disciplines have ways of interaction between different modes of transport hubs. According to this expert in transport industry needs to know: fundamentals of development process of delivery, method of transport processes operative management, basic modes of interaction, assessment of interaction of transport networks and nodes; able to: analyze of traffic in mixed traffic, planning and organizing management to determine costs and benefits to find ways of further development, to determine characteristics of intermodal transport in combination, to determine compliance with transportation and processing capacity of interacting modes and to choose means to harmonize these characteristics, analyze transportation technology in mixed traffic in order to establish range of

applications, drawbacks and benefits to find ways of further development, to predict prospects of traffic in mixed combination, have understanding of organization of control over implementation process, organization of monitoring and control fulfillment of certain operations and complex as whole.

Urban Planning and Transport. Mastering basics of designing residential areas, industrial zones of city, street and backbone of city, the landscape and recreational areas, infrastructure.

Transport Economics. Getting students knowledge and skills that allow to structure and solve economic problems of transport and thus ensure its competitiveness in transport market.

Transport Law. Objective of discipline is extrapolation of legal provisions on scope of industrial relations as qualified training requires obtaining it appropriate set of legal expertise and practical skills in international and national transport law, required to work in national and international transport markets, as well as formation of it understanding of contemporary legal problems of transport activities of international legal norms and principles governing relations of market of transport services.

Logistics. Contents of subject provides students gaining theoretical knowledge in management of logistics, mass production and inventory transportation companies, commercial databases and organizations in marketplace.

Occupational Health and Safety. Forming students knowledge of legal and regulatory framework for occupational safety, government guarantees and conditions of labor, management and supervision of occupational safety and organization of production, training on safety, investigation and registration of accidents, occupational diseases and accidents; stimulation of labor and responsibility for its violation.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.1.1. Cycle of professional and practical training

Statutory Basis of Police Service. Provide students with system of theoretical knowledge and practical skills to form on correct application of law in state car inspection. Subject: administrative law, criminal procedure, control and testing and other regulations that govern activities of State Automobile Inspectorate.

Conveying Machinery. Study of structure handling mechanization and automation of agricultural production, methods of calculation and design.

Performance Features Vehicles. Consider basic laws of movement of vehicles and their relationship with specifications, design parameters and conditions of traffic.

Fuel and lubricants and other operating materials. Studying discipline deals with theory and practice of fuel and lubricants for motor vehicles. Discipline is designed to get students' knowledge of rational use of fuels, lubricants, industrial fluids and non-metallic materials, production of fuels and lubricants, their assortment, properties with qualities such as reliability and efficiency of labor units car engines by introducing fuel and lubricants for not petroleum based.

Energy Efficiency and Renewable Energy. Forming students theoretical knowledge and practical skills in application of secondary energy sources (waste heat gas compressor stations, heat from exhaust gas boiler, ventilation heat livestock facilities, etc.) and renewable sources (solar, wind, biomass, geothermal, etc.).

Performance Features of Roads and Buildings. Learn basics of technology and organization of roads and buildings, structures and products, identify areas of production base, to teach technical and economic parameters to perform selection process diagrams, raw materials and equipment using operational properties of roads and buildings.

Organization of Traffic. Forming students clear theoretical legal knowledge and skills in surveillance of roads, dangerous, oversized and heavy cargo and practical skills to use them in practice police, deep understanding of importance of traffic management and surveillance of roads, flawless execution duties, independent decision tasks facing police Internal Affairs of Ukraine, and functions related to implementation of traffic management services, identification and documentation of offenses related to the maintenance and operation of roads, buildings and road crossings, dangerous , oversized and heavy cargo.

Hygiene Transport of Animals and Animal Products. Formation of theoretical knowledge of the students regarding species transport for animals and their products, modern methods and techniques sanitization transport, packaging, machinery and equipment. Discipline combines technological knowledge possessed by student hygienic norms and processes that are necessary for growing animals, livestock production, its transportation and sale. Helps master regulatory documentation and sanitary requirements for types of vehicles involved in transportation of animals and animal products, which can be used in practice.

Storage Technology to Transport Agricultural Products. Give students basic knowledge of technologies of agricultural products of vegetable and animal origin to transport and direct transport various technical means of modern technologies with minimal losses; teach students how to find and implement the most effective technology and mechanization of transportation of agricultural products; justify sanitary quality requirements raw materials and finished goods during transportation of agricultural products.

Transportation Planning System Agribusiness. Disclosure of nature and methods of developing set of rules to use full potential vehicles for specific natural production conditions, identifying need for these tools to achieve preset outcomes and compliance.

Ecological Characteristics of Traffic Patterns. Learn basics of technology and organization of ecological characteristics of traffic patterns, train technical and economic parameters to perform selection of environmental performance schemes of traffic.

Technical Means of Traffic. Learn basics of designing placement of road signs, use of marking in accordance with road conditions, operation of means of control, travel guides, and fencing devices, materials and equipment for marking.

Organization of International Road Transport. Learn basics of technology and organization, definitions, basic provisions, state road transport in Europe, role of transport factor in economy of Ukraine, international cargo transportation in Ukraine, problem of improving competitiveness of road transport Ukraine, information transport, general concepts of workflow.

Technologically-transport processes in agriculture. Learn basics of technology and technology-transport processes in agriculture, to teach technical and economic indicators to substantiate perform selection flowsheets, raw materials and equipment.

Maintenance and Repair of Vehicles. Learn basic factors that determine organization of maintenance and repair of vehicles, cost and geographic characteristics of city (district), mode of production divisions, selection and adjustment of standards for design of transport, calculation of production program of maintenance and repair company, calculation of production program of maintenance and repair by number of industrial actions, calculation of production program of maintenance and repair work in units, calculation of production program support work.

Vehicle safety. Learn basics of safe operation and use of vehicles, study of theoretical foundations of safety of traffic on streets, etc., studies movement of vehicles.

2.2. Disciplines chosen by students

2.2.1. Cycle of professional and practical training

Professional Introduction. Introducing students to basics of transport technologies as complex process of agricultural production. Trace whole process of transport technologies from designing, linked to area of enterprise training and support necessary means, in fact transport process using modern technology, streamlining technology, communications software, and more.

Fundamentals of Transport Psychology. To acquaint students with basics of traffic psychology: study of personality psychology, business, communication, conflict resolution, interpersonal and group relationships, psychological elements of professional activity.

"Machine-biological area". Provide scientific principles and train future specialist car transporter properties, synthesis and biological media when used in industrial processes transport.

Fundamentals of Customs Legislation. Mastery students basic theoretical and methodological foundations of customs regulation of foreign economic activity in Ukraine's integration into world community, as well as providing them with knowledge about tariffs as an instrument of foreign policy and national security of Ukraine, formation of state budget.

Principles of Criminology. Formation of skills that allow you to make right choice of methods for simulating crime investigation earlier developed plot, rationally determine sequence of investigative and search activities, practices, disclosure, investigation and prevention of crime, mechanism of events that took place, disclosure of internal connections and contradictions in studied phenomena and facts transport.

Traffic Regulations. Study provisions and requirements of existing traffic rules. Obtained skills to solve practical problems of discipline and strict precision of their performance in professional officer and automobile as driver, passenger or pedestrian.

Examination of Accident. Study position of detection and investigation of crimes adjudication, process of proof, proof in proceedings for accident to establish facts of past, details of which fall inquiring and investigator in form of information requiring special identification, recording, investigation and interpretation, implementation expertise ensure establishment of objective truth with utter accident.

Loads Science. Examines properties of objects and materials associated with process of transportation.

Transport Trasology. Provide students with a system of theoretical knowledge and practical skills to form on the correct application of the law in expert trasoloha.

Basic Research. Familiarization with basic laws and methods of scientific and technical creativity, creation and development of practical skills and abilities solving real problems in production, organization, planning and execution of research and management of scientific and technical work and collective scientific work.

Tariffs and Tariff System. Mastery students systemic entity, methodology and skills in area of tariff regulation system, in particular regarding: trends and mechanisms of tariff policy development and application of tariffs, procedures and features of tariff regulation of transport and logistics flows, determining optimal level of tariff rates, non-tariff instruments of regulation transport activities and their efficient use; institutional framework of tariff case in Ukraine, areas to improve tariff regulation of trade and economic relations.

Bachelor
in specialty "PROCESSES, MACHINERY AND EQUIPMENT OF AGROINDUSTRIAL PRODUCTION"
field of knowledge "Machinery and Energetic of Agrarian Production"

Forms of Learning, licensed volume:	
– fixed-time	200
– correspondence	250
Terms of Learning	4 years
Credits	240 ECTS
Language of instruction	Ukrainian
Qualification graduate	Bachelor (Technical) Mechanical Engineer

The concept of training

Of knowledge, skills and professional skills in new generation of processes, machines and equipment crops, livestock, biotechnology, manufacturing, etc. based on modern standards of education adapted to requirements of world's best educational programs for public and private sectors in Ukraine.

Practical training

Passing study (trial, repair and metalwork) and industrial (mechanical-technological, vocational and technological, manufacturing in enterprises) recommended practices for 127 companies, including strategic partners: Claas Ukraine; John Deere Ukraine, Ukraine Amaco; Technician Energy; Astra; Zeppelin Ukraine; Lemken Ukraine; Vaderstadt Ukraine, Tan, Komsomolets, NSC "Institute of Mechanization and Electrification of Agriculture"; UkrNDIPVT by Leonid Pogorelogo.

Proposed Topics for Bachelor theses

1. Development process and support systems of machines growing crops (wheat, barley, rye, sorghum, sugar beet, corn, sunflower, etc.).
2. Technology development and justification of maintenance of agricultural machinery (by brand and type).
3. Evaluation of technical working groups of agricultural machinery (by brand mobile power equipment, tractors, combines, corn, forage harvesters, beet harvester, seeder, etc.) in development process of recovery.
4. Technology development and justification of maintenance of construction machinery (with types).
5. Development process and support systems of machines processing of agricultural products.

Academic rights of Bachelors

Can continue their studies in Master Program in specialties signs which are placed in curricula of undergraduate programs, beginning with the second or third courses:

8.10010203 - "Mechanization Agriculture" or field of knowledge 1801 "Specific categories":

8.18010010 – «Quality, standardization and certification";
8.18010018 – «Administrative Management";
8.18010020 – «Management of Educational Institutions";
8.18010021 – «Higher School of Pedagogy"/

Spheres of Bachelors employment

Receives basic higher education and can work in positions that correspond to 3rd and 4th levels of qualification according to state of professions: head repair shop, head mechanized unit, an engineer from use of DTI, technical service engineer, engineer, inspector health and safety.

Bachelors Program and Curriculum in Specialty "Processes, Machinery and Equipment of Agroindustrial Production"

№	The name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training*					
1	Ukrainian language (for professional purposes)	1	108	2,0	3,0
2	History of Ukraine	1	108	2,0	3,0
3	History of Ukrainian Culture	1	72	1,3	2,0
4	Foreign Language (for professional purposes)	1-4	180	3,3	5,0
5	Philosophy	2-3	108	2,0	3,0
6	Physical Education	1-4	180	3,3	5,0
7	Economic Theory	5	72	1,3	2,0
8	Law	6	72	1,3	2,0
9	Sociology	6	72	1,3	2,0
10	Politology	7	72	1,3	2,0
Total for the cycle			***864***	***15,8***	***24,0***
1.2. Cycle of natural science (fundamental) training*					
1	Physics	1,2	198	3,7	5,5
2	Descriptive Geometry and Computer Graphics	1,2	198	3,7	5,5
3	Higher Mathematics	1,2,3	360	6,7	10,0
4	Chemistry	2	90	1,7	2,5
5	Theory of Mechanisms and Machines	3,4	144	2,7	4,0
Total for the cycle			***990***	***18,3***	***27,0***
1.3. Cycle of professional and practical training *					
1	Theoretical Mechanics	2,3	180	3,3	5,0
2	Mechanics of Materials and Structures	3,4	216	4,0	6,0
3	Computers and Computer Technology	2	108	2,0	3,0
4	Materials and TCM	2,3	216	4,0	6,0
5	Fuel and lubricants, and other maintenance materials	3	90	1,7	2,5
6	Tractors and Cars	3,4,5	360	6,7	10,0
7	Agricultural Machines	4,5,6	396	7,3	11,0
8	Machine Parts	5	144	2,7	4,0
9	Machines and equipment for livestock	6	126	2,3	3,5
10	Conveyor machinery	6	108	2,0	3,0
11	Hydro-Pneumatic and agricultural machinery	6,7	180	3,3	5,0
12	Machines and equipment for processing agricultural products	7	108	2,0	3,0
13	Occupational Health and Safety	7,8	162	2,0	4,5
14	Technical service in AIC	7,8	216	4,0	6,0
15	Maintenance of machinery and equipment	7,8	180	3,3	5,0
16	Exploitation of machines in processing industry	8	90	1,7	2,5
17	Exploitation of machines in livestock	8	90	1,7	2,5
18	Operation of machinery and equipment	8	108	2,0	3,0
19	Economics of agricultural production	8	90	1,7	2,5
Total for the cycle			***3168***	***57,7***	***88***
Regulatory part, total			**5022**	**91,8**	**139**
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of professional and practical training*					
1	Technology of production and processing of agricultural produce	2,3,4	144	2,7	4,0
2	Fundamentals of Biotechnology	4	36	0,7	1,0
3	Engineering Ecology	4	54	1,0	1,5
4	Fundamentals Driving and mobile agricultural machinery	4	108	2,0	3,0

5	Hydraulics	4	108	2,0	3,0
6	Heat	5	108	2,0	3,0
7	Mechanical and technological properties of agricultural materials	5	90	1,7	2,5
8	Electrical and electronics	6	90	1,7	2,5
Chosen by university, total			**738**	**13,8**	**20,5**
2.2. Disciplines chosen by students					
2.2.1. Cycle of professional and practical training*					
1	System "machine - field"	6	90	1,7	2,5
2	Interchangeability, standardization and technical measuring	6	90	1,7	2,5
3	History and Philosophy of agricultural machinery	6	90	1,7	2,5
4	Management and Marketing	7	90	1,7	2,5
5	Electric and automation	7,8	180	3,3	5,0
Chosen by students, total			**540**	**10,1**	**15**
Elective part, total			**1278**	**23,8**	**35,5**
Practical training			**1080**	**20,0**	**30,0**
Degree examination			**288**	**5,3**	**9,0**
Total, according to the field of study			**7680**	**142,2**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.
**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Abstract disciplines "Ukrainian Language (for professional purposes)," "History of Ukraine", "History of Ukrainian Culture", "Foreign Language", "Philosophy", "Physical Education" see. Section 2.1.

Economic Theory. Formation solving skills of professional issues, formation of practical skills in organizational design, preparation of construction documents, financial management, etc., to train competent to make rational and informed decisions, analyze, generalize the economic performance of agricultural organizations to defend their point of view for decisions, to discussion.

Law. Developing knowledge of foundations of theory of law and key areas of law (constitutional, administrative, civil, financial, labor, international, etc.) assimilation methods of legal regulation of economy; clarify legal principles of business and economic activities.

Sociology. Forming holistic view of specifics of object and purpose of sociological knowledge of foreign history and sociology, prospects for its further development, skills acquisition and organization of empirical sociological research and practice effective use of their results.

Politology. The study of nature, theory and methodology of political science as science, development of skills of understanding political relations and processes, acquiring skills of practical application of theoretical, practical and instrumental components of political knowledge, analysis of international politics, geopolitical situation and political processes in Ukraine, its location, status and responsibility in modern political world.

1.2. Cycle of natural science (fundamental) training

Physics. Enhancing knowledge and understanding of phenomena and laws of nature that appear in classical and modern physics and related to their use in industry, technology and everyday life to environmental protection and life safety. Engineering and computer graphics. Formation of knowledge formation geometry, performance and reading technical drawings, construction images such as using computer graphics, geometric modeling to teach students facilities and processes, to provide them with knowledge and skills needed to perform and read drawings for various purposes as those carried out by hand or computer, and solving for pictures, drawings and models of geometric engineering problems.

Higher Mathematics. Formation of theoretical knowledge and practical skills in fundamentals of mathematical tools, main methods of quantitative measurement of random factors affecting any processes, principles of mathematical statistics, which is used during planning, organization and management of production and technological processes.

Chemistry. Submit the student basic theoretical questions in physical chemistry as well as basic concepts of Macromolecular Chemistry.

Theory of Mechanisms and Machines. To deepen students' knowledge of theoretical material about fundamental laws of nature on which calculation schema create needed in engineering, but also as means of education for future mechanical engineers skills in scientific generalizations.

1.3. Cycle of professional and practical training

Theoretical Mechanics. To deepen students' knowledge of theoretical material about the fundamental laws of nature on which calculation schema create needed in engineering, but also as means of education for future mechanical engineers with processes, machinery and equipment of agroindustrial production skills in scientific generalizations.

Mechanics of Materials and Structures. Forming students knowledge of strength of materials, geometric properties of plane sections, external and internal forces, the method of sections, diagrams of internal forces, tensile and compressive strength, mechanical properties of materials, calculation of strength and stiffness at a stretching and compression, basic theory of stress and strain state; strength criteria, displacement, torsion, bending, bending theory further questions, complex impedance, general theorems, elastic systems, common methods for determining displacements, statically undetectable system, calculation of plane curves beams, calculation of thick-walled cylinders and rotating disks, elements of theory of thin shells, to calculate design by boundary conditions, stability of compressed rods, elastic vibrations, strength of materials of re-variable stress, accounts for shock loads, contact stresses, fracture mechanics basis.

Computers and Computer Technology. As required educational and professional program students should be able to: build complex drawings and axonometric images three-dimensional objects, solve problems on intsydentnist two geometric shapes (point, line, plane surface) to solve the problem on intersection of two geometric figures (straight, plane surface) to find distance between shapes and angles between them, for given legal education to build projection points of curves and surfaces and cross sections to perform complex geometric figures, finding life-size oblique sections, to issue engineering and construction drawings for standards; know: principles and methods of projection images, positional methods for solving problems; metric methods for solving problems, methods of formation curves and surfaces; state standards.

Materials science and technology of construction materials. Provide future skill set of knowledge and skills to handle assets dimensional structural and tool materials necessary for understanding of modern agricultural engineering production.

Fuel and Lubricants, and Other Maintenance Materials. In studying discipline deals with theory and practice of fuel and lubricants for machines of agricultural production. Discipline is designed to get students' knowledge of rational use of fuels, lubricants, industrial fluids and non-metallic materials, production of fuels and lubricants, their assortment, properties with qualities such as reliability and efficiency of work machines motor units of agricultural production by introducing fuel and lubricants on nonpetroleum based.

Tractors and Cars. Forming students knowledge of basic operational characteristics of cars and tractors theory of motor vehicles and tractors; design and calculation of vehicle; structure and dynamics of internal combustion engines, construction vehicles and tractors.

Agricultural Machines. Mastering future bachelors basic theory workflow agricultural machines for better understanding the functioning, management and construction.

Machine Parts. Study of principles of work, analysis and design of machine parts and mechanisms of general purpose and material handling equipment. Study kinematic calculations, basic calculations for strength and rigidity, design methods, rational choice of materials.

Machines and Equipment for Livestock. To provide students with knowledge about structure, regulation, basic theory and methods of machinery and equipment for animal based agrozootechnic, sanitary veterinary and technical and economic requirements and working conditions.

Conveyor Machinery. Study of structure of materials handling machinery and agricultural production mechanization and automation of agricultural production, methods of calculation and design.

Hydro-Pneumatic and Agricultural Machinery. Formation of future professionals with skills and knowledge of modern methods of design, production and operation of modern agricultural production vehicles that are equipped with hydraulic and pneumatic.

Machines and Equipment for Processing Agricultural Products. To provide students with knowledge about structure, regulation, basic theory and methods of calculating machines and equipment for processing agricultural products, taking into account properties of agricultural materials and technical and economic requirements and working conditions.

Economics of Agricultural Production. Formation of future professionals of agricultural sector of specialized knowledge and practical skills in field of agricultural economics, planning indicators of industrial and economic activities, use of economic methods of management of agrarian organization, taking into account external factors and internal environment.

Maintenance of Machinery and Equipment. Training specialist who can competently decide on operation of machines and equipment in farms and individual farms, rental companies and peasant unions. Object of study is streaming mechanized processes of production of crops, methods of experimental determination and theoretical calculation of basic technical and operational characteristics of machine-tractor units and complete sets of equipment and their work in establishing producer.

Exploitation of Machines in Processing Industry. To acquaint students with basics of designing stream-processing production lines in industry, construction and commissioning, production and technical service, research equipment and processes. Repair of machinery and equipment. Mastering future mechanical engineers the basics of technological processes of repair of machinery and components; getting practical skills for

common maintenance activities, mastering basics of repair facilities and bases of calculation and design of repair facilities.

Exploitation of machines in livestock. To acquaint students with basics of designing a stream-processing lines in livestock, installation and commissioning, production and technical service, research equipment and processes.

Occupational Health and Safety. Forming students knowledge of legal and regulatory framework for occupational safety, government guarantees and conditions of labor, management and supervision of occupational safety and organization of production, training on safety, investigation and registration of accidents, occupational diseases and accidents; stimulation of labor and responsibility for its violation.

Technical Service in Agriculture. Gaining theoretical knowledge and practical skills that will be needed in practice: design principles of maintenance of machinery and equipment agriculture; principles of industrial and technological base of manufacturing equipment and procedure for installation and commissioning of agricultural machinery and equipment, principles of identifying promising areas of use and services agricultural services, foundation of analysis and research of construction machinery and equipment, and evaluation of their technical level, procedure documentation on staffing logistics, preparation of records, technical expertise and design claims, procedures and methods of diagnosis of complex machinery repair defect parts.

2. Elective academic disciplines

2.1. Disciplines chosen by University

*2.1.1. Cycle of professional and practical training**

Technology of Production and Processing of Agricultural Products. Development of knowledge formation and evaluation of agricultural products, effective implementation of selection process in desired direction and organization of biologically reasonable and economically feasible production technology, processing and storage of agricultural products.

Fundamentals of Biotechnology. Development of knowledge of theoretical and practical foundations of study of biotechnological processes with environmental orientation and related addressing environmental issues of recycling (Bioprocessing) waste and garbage, degradation of various kinds of pollution, ensure production of environmentally friendly products based on cheap and available raw materials.

Engineering Ecology. Form bachelors in engineering profile outlook on major environmental issues of our time, human impact on environment, environmental management and conservation, global ecological crisis and others.

Fundamentals Driving and Mobile Agricultural Machinery. Forming students knowledge of organizational and methodological foundations of practical training students in driving and mobile agricultural machinery for engineering, technology, economics, planning, organization and management.

Hydraulics. Formation of skills that allow you to make right choice of material based on mechanical motion of fluid in variety of natural and man-made environments.

Heat. Development of knowledge of methods of acquisition, conversion, transmission and use of heat as well as principle of thermal machines and apparatus designed for its purpose, thermodynamics, heat transfer (heat and mass transfer) and hidrodynamic which constitute theoretical basis of heat.

Mechanical and Technological Properties of Agricultural Materials. Formation of skills that allow you to make right choices agricultural materials including mechanical-technological properties, provide cost savings in materials, weight, mastering theoretical principles of design.

2.2. Disciplines chosen by students

2.2.1. Cycle of professional and practical training

System "machine - field". Provide scientific principles and train future specialists in Engineering properties and field synthesis engine when used in production processes of agricultural production.

Interchangeability, standardization and technical measurements. Forming students knowledge and skills that allow qualified improve product quality agricultural machinery, use of standards, regulations interchangeability, Metrology and Qualimetry.

History and Philosophy of Agricultural Machinery. Introducing students followed their independent deliberation increment history of scientific knowledge within specific sectors of natural, human, social, engineering, subject to certain historical stages of development of science and culture in general in order to master intellectual wealth of world scientific culture, which is stored in history of mankind and which modern science is based.

Management and Marketing. Formation of modern management thinking, basic system management organizations of all kinds, making appropriate management decisions for future workplace. Formation of Mechanical Engineers agricultural production knowledge of theoretical foundations and practical skills of management and marketing.

Electric and Automation. Familiarization with basic electric and automation applications with automatic control nodes, mechanisms and machines units, review latest and most recent electric drive systems and automation of calculation and automatic control, introduction of integrated tools in operating system, as well as in most software programming languages.

Bachelor
in specialty «MACHINE ENGINEERING»
field of knowledge «Mechanical engineering and processing of materials»

Type of studying, accredited quantity:	
– full-time studying	170 students
– part-time studying	120 students
Duration of studying:	
– full-time studying	4 years
– part-time studying	5 years
Credits	240 ECTS
Language	Ukrainian, English
Academic degree	Bachelor of Engineering

The concept of training

Today agroindustrial production requires the presence of multifunction machines and equipment. Such machines can be created only at presence of highly skilled staff – engineers-designers. Training of engineers-designers is based at high level of teaching of fundamental and general technical disciplines, and also knowledge of perspective development of agricultural machines constructions.

Practical training

During practical training the faculty is oriented on close co-operation and collaboration with educational-experimental enterprises of university, such as: Separated subdivision of NULES of Ukraine “Velykosnytinske Education and Research Farm named after O. Muzychenka”, Separated subdivision of NULES of Ukraine “Agronomic Research Station”, Separated subdivision of NULES of Ukraine “Education and Research Farm “Vorzel”, Separated subdivision of NULES of Ukraine “Boyarka Forestry Research Station”.

Proposed Topics for Bachelor theses

1. An improvement of oil filter in the diesel biofuel production line;
2. An improvement of methane-tank construction for the biogas production;
3. Development of machine for trees transplantation;
4. Development of turn mechanism of stationary wrecker crane;
5. An improvement of nebulizing device of sprinkler of the field cultures for liquid mineral fertilizers application.

Academic rights of Bachelors - can continue studying on the programs of Master's degrees training by specialities, some material is included in the curricula of the Bachelor programs, beginning from the second-third courses of studying:

8. 05050312 «Machines and equipment of agricultural production»;
8. 05050303 «Equipment of forest complex»

Specialities of knowledge field 1801 «Specific categories»»:

8.18010010 – «Quality, standardization and certification»
8.18010018 – «Administrative management»
8.18010020 – «Educational establishment management»
8.18010021 – «Pedagogics of higher school».

Spheres of Bachelors employment

The enterprises of the special purpose of specialist training and bases of practical studying are offered for further employment or at leading enterprises of agroindustrial and nature protection industries of economy of Ukraine.

Bachelors Program and Curriculum in Specialty «Machine engineering»

№	The name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ESTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training*					
1	Ukrainian (to professional direction)	2	108	2	3,0
2	Foreign language	1-4	162	3,0	4,5
3	History of the Ukrainian culture	2	72	1,3	2,0
4	History of Ukraine	1	108	2,0	3,0
5	Philosophy	4	108	2,0	3,0
6	Physical trainings	1-4	216	4,0	6,0
7	Psychology and pedagogics	5	54	1,0	1,5
8	Basis of principle sciences	6	54	1,0	1,5
9	Political science	7	72	1,3	2,0
10	Sociology	7	54	1,0	1,5
11	Basis of economic theory	3	54	1,0	1,5
Total for the cycle			***1062***	***11,6***	***29,5***
1.2. Cycle of natural science (fundamental) training*					
1	Higher mathematics	1-3	504	9,3	14,0
2	Chemistry	1	108	2,0	3,0
3	Informatics and computer equipment	1, 2	162	3,0	4,5
4	Descriptive geometry	1	108	2,0	3,0
5	Physics	1, 2	216	4,0	6,0
6	Applied mathematics	4	108	2,0	3,0
7	Theoretical mechanics	2, 3	216	4,0	6,0
8	Material sciences	3, 4	108	2,0	3,0
9	Technology of constructing materials	2, 3	162	3,0	4,5
10	Mechanics of materials and constructions	3, 4	360	6,7	10,0
11	Basis of electrical engineering	3	108	2,0	3,0
12	Hydraulics	4	108	2,0	3,0
13	Standardization and technical measuring	4, 5	144	2,7	4,0
14	Theory of mechanisms and machines	4, 5	288	5,3	8,0
15	Engineering and computer graphics	1-3	162	3,0	4,5
16	Mechanical and technological properties of agricultural materials	5	108	2,0	3,0
17	Parts of machines	5, 6	252	4,7	7,0
18	Heating engineering	6	108	2,0	3,0
19	Basis of scientific researches	7	108	2,0	3,0
20	Religious sciences	3	36	0,7	1,0
Total for the cycle			***3474***	***66,4***	***96,5***
1.3. Cycle of professional and practical training*					
1	Professional orientation	1	36	0,7	1,0
2	Technology of mechanical engineering	4-6	324	6,0	9,0
3	Basis of constructing of mobile power vehicles	6, 7	216	4,0	6,0
4	Fuels, oils and other consumables	3	108	2,0	3,0
5	Theory of cutting, metal-working and instruments	4	72	1,3	2,0
6	Computer design of technological processes	8	108	2,0	3,0
7	Safety of workers	8	54	1,0	1,5
8	Electronics and microprocessor equipment	7	72	1,3	2,0
9	Constructing of agricultural machines	7, 8	252	4,7	7,0
10	Basis of labor protection	8	54	1,0	1,5
11	Electrical equipment and facilities for automation of agricultural technics	8	72	1,3	2,0
Total for the cycle			***1368***	***25,3***	***38,0***
Regulatory part, total			***5904***	***109,3***	***164***

2. ELECTIVE ACADEMIC DISCIPLINES (by list of the program „Machines and equipment of agricultural productions")					
2.1. Disciplines chosen by University					
2.1.1. Cycle of natural science (fundamental) training*					
1	System „Machine - field"	6	54	1,0	1,5
2	Reliability and repairing of agricultural technics	7, 8	108	2,0	3,0
3	Hydraulic driving devices of agricultural technics	6	108	2,0	3,0
4	Tillage mechanics	7	54	1,0	1,5
5	Usage of machines in agriculture	8	108	2,0	3,0
6	Usage of machines in animal production	8	108	2,0	3,0
2.1.2. Cycle of professional and practical training*					
1	Machines and equipment for crop production	5, 6	324	6,0	9,0
2	Basis of machines constructions for animal production	7	144	2,7	4,0
3	Machines and equipment for agricultural productions	6	72	1,3	2,0
4	Machines for processing and storage of agricultural products	8	108	2,0	3,0
5	Lifting and transporting machines	7	108	2,0	3,0
Chosen by university, total			***1296***	***24,0***	***36,0***
2.2. Disciplines chosen by students					
2.2.1. Cycle of natural science (fundamental) training*					
1	Technology of animal products production	5	72	1,3	2,0
2	Technology of crop products production	5	72	1,3	2,0
2.2.2. Cycle of professional and practical training*					
1	Dynamics and durability	5	108	2,0	3,0
2	Designing of agricultural machines	8	54	1,0	1,5
3	Ergonomics of agricultural machines	8	54	1,0	1,5
Chosen by students, total			***360***	***6,6***	***10,0***
2. ELECTIVE ACADEMIC DISCIPLINES (by list of the program „Equipment of forest complex")					
2.1. Disciplines chosen by University					
2.1.1. Cycle of natural science (fundamental) training*					
1	Repairing of machines and equipment	8	108	2,0	3,0
2	Reliability of machines	7	72	1,3	2,0
3	Hydraulic driving devices of techniques for forestry	6	72	1,3	2,0
4	Timber plant species	7	54	1,0	1,5
5	Management and marketing	8	108	2,0	3,0
6	Technical maintenance of machines and equipment	8	72	1,3	2,0
7	Economy and organization of forest complex	7	108	2,0	3,0
2.1.2. Cycle of professional and practical training*					
1	Machines and equipment for forestry	5, 6	162	3,0	4,5
2	Woodworking machine-tools and equipment	5, 6	162	3,0	4,5
3	Woods cutting and transporting	6	90	1,7	2,5
4	Using of machines for forestry	8	90	1,7	2,5
5	Lifting and transporting machines	7	90	1,7	2,5
6	Standardization and certification of machines	7	72	1,3	2,0
7	Machines and equipment of forestry productions	6	36	0,7	1,0
Chosen by university, total			***1296***	***24,0***	***36,0***
2.2. Disciplines chosen by students					
2.2.1. Cycle of natural science (fundamental) training*					
1	Basis of forestry	6	72	1,3	2
2	Basis of ecology and conservancy	8	54	1,0	1,5
2.2.2. Cycle of professional and practical training *					
1	Forestry science	5	54	1,0	1,5
2	Quality measuring of woods	6	72	1,3	2,0
3	Constructing of machines for forestry	8	108	2,0	3,0
Chosen by students, total			**360**	**6,6**	**10,0**

Elective part, total	**1656**	**30,6**	**46,0**
Practical training	**720**	**13,3**	**20,0**
Degree examination	**36**	**0,7**	**1,0**
Total, according to the field of study	**8640**	**160**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.
**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Abstracts of following disciplines «Ukrainian (to professional direction)», «History of Ukraine», «History of the Ukrainian culture», «Foreign language», «Philosophy», «Physical training», can be found at the section 2.1.

Psychology and pedagogics. The course “Psychology and pedagogics” are knowledge about features, principles and principles of study and education of personality, psychological features of its forming and development, about individually psychological properties, which stipulate the specific of personality’s conduct, its activity and intercourse, help to understand the reasons of people acts, regulate mutual relations with them.

Basis of principle sciences. The course of law gives to the student the necessary to any well-educated citizen minimum of knowledge in relation to the rights and duties which are related to forming of the legal state in Ukraine. As a result of this course studying a student must know the substantive provisions of Constitution of Ukraine, right and freedom of a man and citizen in Ukraine, mechanisms of defence of rights and freedoms of a man in Ukraine, able to determine methods and facilities of activity, behaviour methods, based on own knowledge and presentations, to apply the got knowledge during work with concrete normatively legal by acts.

Political science. The course studies principles of development and functioning of political life of society, mechanisms of political power, management of political processes. The basic stages of development of world and domestic political idea, politician and political relations, power, process, political system of society, political mode, political parties, public organizations and motions in socio-political life of society, personality and policy, political culture, world political process are examined in discipline.

Sociology. In a discipline course there are pointed knowledge about society, social communities, relations, processes of institute. There are studied a structure and functions of sociology, social structure of society (social class, ethnic, social, cultural and professional groups), social relations and social policy, problems of social justice, special sociological theories (sociology of labour and management, sociology of policy, sociology of public opinion, sociology of education), methodology of sociological researches.

Basis of economic theory. Economic theories and principles, relations and objective principles of development of public production, market theory and mechanism of its functioning, basis of enterprise, land rent are studied. There are analysed the general problems of transitions of Ukraine to social-market economy and its integration to world economy.

1.2. Cycle of natural science (fundamental) training

Higher mathematics. The study of this discipline allows learning to use mathematical (analytical) methods for description and study of physical, technical, technological and other processes. Knowledge of the systems of linear equalizations, basis of vector algebra, equalizations of line and plane in space, basic formulas and theorems of differential and integral calculation, substantive provisions and methods of decisions of differential equalizations will allow to decide and analyse the systems of linear equalizations, decide the tasks of analytical geometry and mathematical analysis, apply knowledge in practice, ground decision, conduct the analysis of decision, apply mathematical methods to the decision of the applied technical and technological tasks.

Chemistry. Fundamental discipline «chemistry» provides students of knowledge about composition, structure, properties and transformations of matters, which are basis of construction materials, and knowledge of terms of protracted, saving, ecologically – safe exploitation of machines and systems of natural resources using. The study of chemistry provides a basis for training students professionally – the oriented and special disciplines and it promotes forming of modern world view of a man.

Computer science and equipment. The informative processes, methods and facilities of getting, transformation, transmission, storage and usage of information, application of information technologies are studied in the discipline course. The purpose of discipline study is forming of modern level of informative and computer culture, grant to the students and fixing by them knowledge of basis of computer science and computing engineering, acquisition of practical skills of work on a modern computer technique, and also ability to apply them during work with the modern computer systems of treatment of information.

Descriptive geometry. Discipline studies dimensional forms and methods of their image on a plane, examines the methods of construction of images and methods of decision of dimensional tasks by these images. The study of discipline allows developing dimensional thought and capacities for the analysis of geometrical forms, forms skills of construction of volume graphic models, operation by draft as the mean of graphic information transfer.

Physics. The discipline studies properties of the material world, a variety of physical phenomena, principles of co-operation and motion of material bodies, and also processes and mechanisms for their control, called to form students' analytical and modelling thinking. A student acquires physical knowledge during the process of mastering of physical concepts, principles, and theories for the further learning general technical disciplines.

Applied mathematics. The applied mathematics which is based on a theory of chances and mathematical statistics is the important constituent of mathematical education of future specialists. The purpose of discipline – to teach future specialists bases of modern mathematical tools, necessary for an analysis and decision of practical tasks, to assist in forming the students' skills in mathematical design and using of mathematical methods to solve applied tasks.

Theoretical mechanics. The discipline studies general acts and principles of mechanical motion, equilibrium of material objects, mechanical systems and existent methods and facilities of solving tasks, drafting of calculation models of the real technical objects.

Material science. Principles, which determine structure and properties of materials depending on their composition and terms of treatment, are studied in this course. The course allows to study the modern high-efficiency methods of increasing the properties of durability, corrosive firmness, heating- and frost resistant alloys, effective methods of treatment of surface of wares with the purpose of substantial increasing of anticorrosive

firmness, development and use of new polymeric and composition materials with the set complex of properties.

Technology of construction materials. This discipline studies basic information about the methods of receipt of construction materials and methods of its physical and chemical, technological and mechanical treatment with the purpose of providing of necessary properties and forming of wares in the proper constructions of machines and mechanisms.

Mechanics of materials and constructions. The discipline studies the methods of engineering calculations of machine details, elements of construction on durability, inflexibility and firmness in the conditions of action of the static and dynamic loadings recognition change of temperature and processes, related to duration of exploitation at simultaneous reliability, longevity and economy.

Basis of electrical engineering. The main task of the course is a study of bases of power supply, electromechanic and facilities of electricity safety. During studying student masters basic principles, applied at the analysis of electric circles, basic methods of analysis of electric circles, seizes the general method of construction of scheme and mathematical models of electrical engineering chains, able to analyze typical electrical engineering chains at typical external influences, has practical skills of analytical, numeral and experimental research of basic processes which take place in electrical engineering chains, knows rules and charts of power supply, electrical driving devices and safety of electricity.

Hydraulics. In the cycle of disciplines the basic physical and mechanical properties of liquids, substantive provisions of hydrostatics, hydrodynamics are marked. The existing structures of hydraulic machines, basis of hydraulic driving devices are studied. The planning and calculation of the agricultural water systems are conducted.

Interchangeability, standardization and technical measuring. The discipline purpose is studying principles of organization of machine-building production on the basis of interchangeability, acquaintance with the operating norms of precision and quality, capture methods and methods of their control, studying bases of standardization and quality management of products in machine industry. Mastering of discipline will allow to the future engineers to provide the necessary level of planning of machines and technological rigging due to using of decisions which are based on principles of interchangeability and standardization.

Theory of mechanisms and machines. The discipline studies bases of research, calculation and planning of the mechanical systems, devices, mechanisms and equipment in the conditions of editing, exploitation and unitization of working machines in modern agricultural building, and also general methods of structural, kinematics and dynamic analysis and synthesis of mechanisms and machines of agricultural technique.

Engineering and computer graphic arts. The questions of imaging by projection method of technical wares, units and details, methods of details connection; the rules of presentation of information of their making technology and application conditions are studied in discipline. The studying of standards, related to the drafts of details, is carried out in the process of implementation of graphic tasks.

Mechanical and technological properties of agricultural materials. It is complex discipline which studies physical and mechanical properties of such agricultural materials, as soil, fertilizers and material of hypogenous taking into account the changes of temperature and humidity.

Parts of machines. It is base technical discipline which studies methods, rules and norms of calculation and constructing of typical details and frame-clamping units of machines. Bases of calculations are also studied on durability and inflexibility, methods of constructing, rational choice of materials and methods of connection of details. The task of course is to get skills of calculation and constructing of machine details and units, to

master methods, rule and planning norms, which are provided of making the reliable and economic constructions, and also development engineering thinking of students.

Heating engineering. The discipline studies features and technical aspects of transformation of natural energy resources (organic and nuclear fuel, warmth of bowels of the earth, energy of sun, water and wind and others) in the directly in-use forms of energy (warmth, work and their derivatives, for example – electric energy). Discipline includes technical thermodynamics, theory of heating- and mass-transfer, examines heat-engines and refrigeration devices, compressors and ventilators, fuel burning equipment and caldron settings.

Basis of scientific researches. The discipline studies the bases of scientific activity, in particular concept of method and methodology and their role in scientific cognition, stages of research work, question of organization of experiment execution, basis of inventing and also methods of the statistical processing of experimental data.

Religious sciences represent the complex of social sciences, where the object of study is religion. Knowledge of religion as the spiritual phenomenon is a condition of becoming of everybody as personality and especially student – future elite of the state. Teaching of course assist to capture achievements of world and domestic culture, helps student to constitute oneself in world view questions on the basis of knowledge of essence of religion, its element, types in historical genesis and to understand the features of philosophy of Orthodoxy and Catholicism, which are most widespread in Ukraine.

1.3. Cycle of professional and practical preparation

Professional orientation. The course reveals the essence of training specialists in the specialty "Mechanical engineering» develops an understanding of the specifics of the field of "Machinery & materials", acquaints students with their capabilities in order to offer them to choose one of the most appropriate professions taking into account the needs of production.

Basis of constructing of mobile power tools. The discipline gives to the future engineers necessary knowledge from bases of theory and methods of substantiation of parameters and indicators of tractors and cars and their engines, definition of dependence of their performance against speed and power indicators, construction and working conditions, methods and equipment for testing of tractors and automobiles, basic tendencies and directions of their improvement, acquires the skills to formulate requirements to the properties and operating characteristics of tractors and cars depending on the operation conditions, perform analytical substantiation of their main parameters, taking into account the perform analytical substantiation of their main parameters under particular conditions of agricultural production and the achieved level of autotractor industry, independently solve the problems of the heat and dynamic calculation of automotive engines and traction and dynamic calculations of tractors and cars.

Technology of mechanical engineering. The discipline studies the methods of obtaining and processing of blanks to ensure high quality of products, economy of materials, high productivity. It includes the development of technological processes (routing and operating) the receipt and processing of work pieces, that make various of structural materials, their technical and economic characteristics, the study of the schematics of equipment and tooling, design shops of machine-building plants issues manufacturability of designs blanks, parts, machines and equipment, taking into account methods of their obtaining, technological methods of increase of reliability of machine.

Fuel, oil and other consumables. The discipline studies theoretical and practical questions of fuel properties, lubricants and other consumable (paints, adhesives, interior materials and the impact of the quality of technical and economic indicators of machines and equipment of agricultural and forestry production; develops the skills of definition of

the basic indicators of the quality and selection of suitable varieties and brands of petroleum products, special liquids and other consumables.

Theory of cutting, metal-working and instruments. The discipline studies a concept and deadlines for processing by cutting, physics and mechanics processes, construction and geometry of cutting tools and materials for their manufacture, construction of metal-cutting machines and accessories to them, and the types that do not run on them with a substantiation of rational cutting modes, discusses the physical and chemical processing of machine parts.

Modelling of technological processes on the PC. Bases of design of agricultural processes on the computer are considered, basic concepts and determinations are set, and the methods of application of computer are investigated for management processes in the production.

Safety of workers. The purpose of discipline is theoretical and practical preparation of future specialists to assimilate knowledge, abilities and skills to create the safe terms of life and activity in the environment of stay, understanding of world view principles of harmonious relations of man with a technique, nature and society. A task consists of clear understanding of dangerous and harmful factors in situations which arise up in the environment, their authentication, search and ground of optimum safe terms of man life.

Electronics and microprocessor equipment. The purpose of teaching of discipline - engineers get the proper electrical engineering preparation, owned wide theoretical knowledge in industry of electronics and microprocessor technique, able to use these knowledge in practice. The task of study to the course is mastering of theoretical knowledge from bases of electronics, and ability to apply these knowledge in practice of use of semiconductor electric devices and charts which are built on their basis, including digital impulsive charts, and also mastering of course of bases of microprocessor technique, vehicle inside of microprocessor, its programmatic part, use of such vehicles in practice of management technological objects.

Constructing of agricultural machines. The discipline foresees the study of theoretical bases and basic methods of planning of competitive resource saving of agricultural machines, technological equipment and mechanized processes. A receipt of skills students is from the calculations of machines with the use of modern methods and computer programs, that will allow promote the technical and aesthetically beautiful level of machines, reduce their prime price.

Basis of labour protection. In discipline legal and organizational questions of labour protection, dangerous and harmful factors of production environment and methods of their decline to the normative sizes, bases of fire protection safety and safety of electricity with the purpose of prophylaxis of accidents and professional diseases on a production are considered. The purpose of discipline study is a theoretical and practical preparation of specialists, which on the basis of the got knowledge would be able to develop and inculcate the safe terms of labour on the workplaces of workers of Agrarian complex, construct the safety of hardware. A task of discipline is preparation of future specialists, able to inculcate labor protection decisions, directed on the improvement of terms of labour, decline of traumatism and professional diseases in industry of Agrarian complex, increase of capacity.

Electrical equipment and facilities of automation of agricultural technicians. The purpose of course is to obtain knowledge on questions the features of construction and work of separate elements and systems of electrical equipment: principles and facilities of power supply, construction of facilities of lamplight and methods of its calculation, principles of construction and calculation of the electric heating and electrotechnology, construction of systems of electromechanic and use of separate types of electromechanic in a modern agricultural production.

2. Elective academic disciplines (after the list of the program „Machines and equipment of agricultural productions")

2.1. Disciplines chosen by University

2.2.1. Cycle of natural science (fundamental) training

System „Machine - field". In discipline study ways and methods of decision of issues of the day of the high-efficiency use of agricultural technique in the field terms with the purpose of receipt of maximal biological harvests with minimum power charges and maintenance of fertility of soils and environment. The tasks of removal of consolidation and destruction of structure of soils decide by the workings systems of agricultural aggregates, diminishing of losses of agricultural produce, accordance of constructions of agricultural machines to the nature-climatic terms of their use and control of quality of implementation of the mechanized operations in a plant-grower.

Reliability and repair of agricultural technicians. It is complex discipline which studies: engineering-physical bases of reliability of agricultural technique, test of machines are on reliability, methods of providing of reliability of agricultural machines, terms and determinations of the system of technical service and repair; technological processes of repair of machines; technologies of typical component, knots and aggregates overhaul; processes of loss and proceeding in the capacity of agricultural machines.

Hydraulic driving devices of agricultural technicians. Discipline studies structures, theories of workings processes and rules of exploitation of hydraulic driving devices, which are needed for the high-efficiency use of agricultural technique, high-quality service and repair, purposeful perfection. The study of construction, principle of action, adjusting, hydrokinetics, characteristics of speed and power of hydraulic driving devices used in agricultural machines and bases of theory is foreseen to the calculation of hydraulic devices.

Tillage mechanics. The methods of formalization of agricultural materials and environments and methods of construction of equalizations which describe co-operating with them of workings organs of machines of Agrarian complex with the purpose of determination of kinematics and dynamic parameters of workings organs are examined.

Usage of machines in agriculture. In discipline the questions of rational selection, drafting and use of hardware, providing of their capacity and storage, observance of technological requirements are examined with the purpose of receipt of high operating, economic and high-quality indicators of work.

Usage of machines in animal production. Discipline studies bases of choice the high-efficiency use of technological complexes and separate facilities of mechanization in a stock-raising. The purpose of discipline is forming for the students of scientific pictures of methods of ground technological lines for mechanization of production processes, planning and organization of measures on technical exploitation of farm technique. At the study of course students get knowledge about the structure of stock-raising farms, methods of expert estimation of stock-raising objects, operating properties of farm machines, criteria of quality of their work, method of calculation of economic efficiency of technical maintenance of technological lines of stock-raising farms, determination of their office hours.

2.1.2. Disciplines of professional and practical training

Machines and equipment for crop production. The constructions of machines, types and structure of their workings organs and occasions, process of co-operation of worker of parts, are examined with the processed material and environment, and also technological adjusting and classification of machines and equipment which is used in a plant-grower.

Basis of machines constructions for animal production. It is complex discipline which studies the value of mechanization of technological processes of production of goods of stock-raising and zootechnic requirements to the processes and hardware, that they are executed. The question of structure, principle of action, classification and estimation, and also basis of constructing and calculation of machines and equipment of stock-raising enterprises is considered.

Machines and equipment for agricultural productions. The constructions of machines, types and structure of their workings organs and occasions, process of co-operation of workings organs, are examined with the processed material and environment, and also technological adjusting and classification of machines and equipment which is used in an agricultural production.

Machines for processing and storage of agricultural products. Discipline is foreseeing the study of theoretical and practical questions, related to the special typical processes and typical equipment which is used in agricultural processing productions. During the study of discipline it is planned to give to the future specialists of knowledge from bases of construction, principles of work, adjusting and maintenance of equipment, to the methods of engineering calculation of equipment of the technological stages of production and selection of necessary equipment for realization of necessary sequence of technological operations.

Lifting and transporting machines. At the study of discipline the structure of different types of a lifting-transport equipment, methods of planning of modern facilities of mechanization and automation of constituent and movable operations, is examined, in a that number conveyers, conveyers, robots, manipulators, and also facilities of small mechanization, method of calculation, constructing, planning and exploitation of machines and mechanisms which execute lifting-transport operations.

Technology of engineering. Discipline studies the technological methods of receipt and treatment of purveyances for providing of high quality of products, economy of materials, and high yield of labour. What includes development of technological processes (rout and operation) of receipt and treatment of purveyances from different construction materials, the technical and economical descriptions, study of principle charts of equipment and rigging, planning of workshops of machine-building plants, questions of technologicalness of constructions of purveyances, details, machines and aggregates taking into account the methods of their receipt, technological methods of increase of reliability of machines.

2.2. Disciplines chosen by students

2.2.1. Cycle of natural science (fundamental) training

Technology of animal products production. Discipline is included in the block of disciplines after the choice of student, which form a bachelor, capable on the basis of knowledge of biological features of agricultural animals and progressive technologies of purveyance of forage and technologies of production of milk, beef, pork, products of the pig breeding and sheep breeding to get the products of high quality with the least charges of forage and labour. In discipline the biological features of agricultural animals,

progressive technologies of purveyance of forage and technology of production of different types of products of stock-raising, zootechnic requirements, are examined to the machines, equipment and facilities of mechanization and automation on stock-raising farms and complexes.

Technology of crop products production. A course is occupied by a central place in agricultural production and built on principles (principles) of biological science, which studies the features of development of plants, their requirement to the terms of environment. On principle it is important to capture the complex of modern knowledge and skills, which allow to promote the productivity of agricultural cultures, improve quality and stored of products on the basis of knowledge of biology of cultures in relation to concrete ground-climatic terms, a future engineer, and also effectively to use ground-climatic resources and guard of environment.

2.2.2. Disciplines of professional and practical training

Dynamics and durability. It is complex discipline, which studies the methods of engineering calculations of details of machines, elements of construction on durability, inflexibility and firmness at additional influence of forces of inertia, which arise up at the dynamic loading and swaying processes. The separate section of this discipline is devoted to the methods of engineering calculations of details of machines and elements of construction on durability, inflexibility and firmness at presence of cracks.

Design of agricultural machines. In an educational course disciplines are examined substantive provisions of design are sciences about the artistic constructing of technique, his category, their property and quality. Facilities and methods of prosecution are studied of form, composition of machine; skills of development of characters of functions of control and management are obtained; students meet with the right of ownership on developments in industry of design and bases of its defence.)

Ergonomics of agricultural machines. In an educational course disciplines are examined substantive provisions of ergonomics – scientific and practical discipline, which studies activity of man, instruments and facilities of its activity, environment in the process of their co-operating with the purpose of providing of efficiency, safety and comfort of vital functions of man. Influence of psychical tension, fatigue, emotional factors and personal qualities of man is investigated on efficiency of labour activity. The features of perception, attention, memory, thought of man are studied, it agile vehicle, possibility of perception and redoing of information.

2. Elective academic disciplines (after the list of the program „Equipment of forest complex")

2.1. Disciplines chosen by University

2.1.1. Cycle of natural science (fundamental) training

Repairing of machines and equipment. In discipline study conformities to principle of change of the technical state of machines and their elements in the process of exploitation, methods and methods of removal of defects and damages, statement surface parameters of details with the necessary physical and mechanical properties by the means of overlaying, spraying, application of polymers, galvanic covering, flowage, electric methods of treatment and renewal by it to the capacity of agricultural technique.

Reliability of machines. It is complex discipline which studies: terms and determinations of reliability; engineering and physical bases of reliability of agricultural machines; mathematical theory of reliability; there is a reliability test of machines; methods of providing of reliability of agricultural machines. Purpose of discipline – to teach future specialists to provide reliability of agricultural technique during the set time on condition of optimum charges of financial and labour resources on their planning, production, exploitation, technical service and repair.

Hydraulic driving devices of techniques for forestry. The purpose of discipline is a grant to the future specialists of knowledge from a structure, theory of workings processes and rules of exploitation of hydraulic driving devices, which are needed for the high-efficiency use of agricultural technique, high-quality service and repair, purposeful perfection. The study of construction, principle of action, adjusting, and hydraulic kinematics, characteristics of speed and power of hydraulic machines and bases of theory is foreseen to the calculation of hydraulic driving devices.

Timber plant species. Educational discipline examines the wide circle of questions, which touch ecology, biology and technology of artificial forest renewing and propagation. Taking into account that most specialists of forestry industry work with artificially renewed forests, the primary objective of discipline is directed to study of new technologies of forest propagation considering the regional and local typical conditions of plantings.

Management and marketing. Educational discipline is called to form the certain world view of manager and marketing specialist for students, to aim at the computer-integrated use of the got knowledge from separate disciplines for the decision of tasks which will arise up in the real production activity and sphere of service.

Technical maintenance of machines and equipment. Discipline is the special scientifically applied to the cycle of professional preparation of specialist from constructing and design of machines. In discipline general principles of maintenance of the in good condition state and operability technique for users with the use of the preventive-maintenance system of technical service, basic principles of accompaniment of the constructed and made machines are expounded regulated normatively technical by a document on exploitation of machines, technical service, repair, by requirements to fuels and oils materials, by a nomenclature on made spare parts (numeration and authentication).

Economy and organization of forest complex. The task of study of discipline is to help students to connect forestry complex, technological and economic knowledge for development of technical and economic plan of enterprise of forestry. As a result of study of discipline students must own the modern methods of planning and organization, to use economical and of a particular branch informative resources for effective work of forestry production.

2.1.2. Cycle of professional and practical training

Machines and equipment for forestry. Educational discipline studies the modern state, problems and prospects of development of engineer for forestry, types of modern tractors, intended for forestry, machines for collection and treatment of seed, machine for bringing organic-mineral fertilizers, sowing and forest-planting machines, machines for the deck-houses of care of the forest, for a fight against forest fires, and also machines for uprooting of stumps and export of them from a silvicultural area.

Woodworking machine-tools and instruments. In the educational course of discipline the resulted bases of theory of cutting of wood and arboreal materials, cutting as working process of woodworking machine-tools, tree-cutting instruments, common data about the equipment of woodworking enterprises, functional component units and

mechanisms of woodworking equipment, tree-cutting to make up general setting, equipment of the special woodworking productions.

Woods cutting and transporting. Educational discipline studies the question of technique and technology of purveyance of wood raw material, his roughing-out and supply to the users, acquaints with the methods of work in forestry at the tree felling of wood, to the effective forms of management of organization of labour at the use of new machines and mechanisms, to the decline of energy consumption and financial resources.

Using of machines for forestry. The study of discipline provides future specialists theoretical and practical knowledge on questions a technique and its exploitation in the new terms of technologies of purveyance of wood raw material, his roughing-out and supply to the users.

Lifting and transporting machines. At the study of discipline the structure of different types of a lifting-transport equipment, methods of planning of modern facilities of mechanization and automation of constituent and movable operations, is examined, in a that number conveyers, conveyers, robots, manipulators, and also facilities of small mechanization, method of calculation, constructing, planning and exploitation of machines and mechanisms which execute lifting-transport operations.

Standardization and certification of machines. General principles of standardization, metrology and certification of technique are expounded in discipline. It is reflected accordingly Principles of Ukraine on standardization, metrology and certification and national standards of basis of drafting of normative documents, technical requirements intended for forming, technological processes on making of technique and equipment, maps of control of their quality and standards of enterprise, the rules of the metrology providing of processes of estimation of quality of technique and their certification are resulted.

Driving of forestry machines. In discipline the questions of method of study of organs of management of tractors and self-propelled facilities of the forestry setting, preparation of them are examined to work and implementation of working as a forestry technique. Economic feasibilities of tractors and aggregates are foreseen by a construction can be fully used only for the excellent mastering and rational application of qualifying receptions of management machines under various conditions, for what it is needed well to know a structure and co-operate mechanisms and systems of machines, rule their service and exploitations.

Machines and equipment of forestry productions. The constructions of machines, types and structure of their workings organs and occasions, process of co-operation of workings organs, are examined with the processed material and environment, and also technological adjusting and classification of machines and equipment which is used in forestry.

2.2. Disciplines chosen by students

2.2.1. Cycle of natural science (fundamental) training

Basis of forestry. The purpose of discipline is opening of theoretical maintenance, ecological bases of recreation of forest biocenosiss in different ground-climatic terms taking into account the newest achievements of forestry practice. Essence of recreation, forming, structure and functioning of native types of the forest, which are the primary purpose of tree renewing and forest propagation, opens up in discipline, taking into account the modern role of forest ecosystems for Ukraine.

Basis of ecology and conservancy. At the study of discipline a student acquires knowledge from the basic methods of ecological researches, conformity to principle of mutual relations of living creatures between itself and with lifeless nature, influence of abiotic, biotic and anthropogenic factors on living creatures, description of ecosystems structure of geobiocenosiss, form of geobiocenosiss connections, and also principles of rational usage of natural resources and prospect of ecological conversion of forestry production of Ukraine.

2.2.2. Cycle of professional and practical preparation

Forestry science. The study of discipline provides students knowledge of structure of wood, physical, chemical and mechanical properties of wood, that it is necessary for the high-quality mastering of next courses, and also active engineering activity, directed on upgrading of commodities from wood.

Quality measuring of woods. This discipline provides to students the knowledge and professional skills about the methods to estimate the quality of trees, trees renewing methodical and commercial timbering requirements. The tasks of discipline is to study quantitative methods to evaluate the quality of trees, renewing of trees, terms of planting, tree fallings works, production of saw-timbers, commercial timbers and saw-timbers.

Constructing of machines for forestry. The method of constructing of machines for forestry is examined, analytical pre-conditions of conformities to principle of workings processes of knots and units are grounded, and also dependences are set for determination of rational parameters and modes of operations of machines.

2.8 EDUCATIONAL AND RESEARCH INSTITUTE OF ENERGETICS AND AUTOMATION

Director – of the Institute, Doctor of technical sciences, professor
Volodymyr V. Kozyrskyi
Phone: (044) 527-85-80 E-mail: nni.elektrik@gmail.com
Location: building № 8, r. 16

FACULTY OF ENERGETICS AND AUTOMATION

Dean – of the faculty Candidate of technical sciences, associate professor
Ivan P. Radko
Phone: (044) 527-87-81, 527-87-31, fax: (044) 2584151,
E-mail:electrify_dean@twin.nauu.kiev.ua
Location: building № 8, r. 11

The faculty organizes and coordinates the educational process of bachelors in the following specialties:

6.100101 «Power engineering and electrotechnical systems in agroindustrial complex»

Issue Department:
Electrical supply
Phone: (044) 527-87-29, E-mail: nni.elektrik@gmail.com
Director of the Institute, Doctor of technical sciences, professor
Volodymyr V. Kozyrskyi

Electric machinery and electric technologies
Phone: (044) 527-87-84, E-mail: azhilt@mail.ru
Head of department, Doctor of technical sciences, professor Andrei V. Zhyltsov

Department of automation and robotic systems named after acad.I.I. Martynenko
Phone: (044) 527-82-82, E-mail: Lysenko@nauu.kiev.ua
Head of Department, Professor Vitaliy P. Lysenko

«Electric machines and electric technologies»
Phone.: (044) 527-85-22,
E-mail:lchervinky@gmail.com
Head of department, Ph. D. of technical sciences, professor, Leonid S. Chervinskyi
Heat energy Phone: (044) 527-87-48, E-mail:gorobetsv@ukr.net
Head of department, Ph. D. of technical sciences, professor Valeryi H. Gorobets

6.050202 «Automation and computer-integrated technologies»

Graduating department:
Department of automation and robotic systems named after acad.I.I. Martynenko
Phone.: (044) 527-82-82, E-mail: Lysenko@nauu.kiev.ua
Head of Department, Professor Vitaliy P. Lysenko

6.050701 «Electrical engineering and power technologies»

Graduating department:
Electricity supply Phone: (044) 527-87-29, E-mail: nni.elektrik@gmail.com
Director of the Institute, Doctor of technical sciences, professor
Volodymyr V. Kozyrskyi

Bachelor
in specialty " POWER ENGINEERING AND ELECTROTECHNICAL SYSTEMS IN AGROINDUSTRIAL COMPLEX "
field of knowledge "Agricultural technology and Energy production"

Learning, licensed volume:	
– full-time	170 people
– correspondence	170 people
Apprenticeship	4 years
Credits	240 ECTS
Language of instruction	Ukrainian
Qualifying graduates	Technician-Electrician

The concept of training

The educational process is based on a systems approach and interdisciplinary training principles to foster students' broadmindedness? non-standard thinking, the ability to solve overhead and socio-economic problems and to meet the needs of modern production and labor market.

Practical training

Practical training is carried out in educational and research facilities of the university and the leading enterprises like poultry factories "Ukraine", "Kiev", "Havrylivski" Greenhouse "Pusha Vodytsya", PAS "Kyyivsilelektro" PAS "Kyyivelektromontazh", companies "Oblenergo" .

Proposed Topics for Bachelor theses

1. Autonomous system of animal energy complex use gas generator installations.
2. The set of steps to improve efficiency in diagnosing of electrical repair shops.
3. Electrification of technological processes in hag feeding Barn.
4. Efficient energy heating system of greenhouse.
5. Microprocessor protection system PL-10 kV.

Academic rights of Bachelors - have ability to continue their studies in the Master Programme in specialties signs which are placed in the curricula of undergraduate programs, beginning from the second or third courses:

8.10010101 - "Power of Agricultural Production"

8.10010103 - "Electrification and Automation of Agriculture"or field of knowledge 1801 "Specific categories":

8.18010010 «Quality, standardization and certification"
8.18010018 «Administrative Management"
8.18010020 «Management of Educational Institutions"
8.18010021 «Higher School of Pedagogy"

Spheres of Bachelors employment

Specialists are trained to work in the following sectors: installation, repair and maintenance of electric motors, generators, transformers, electricity distribution and control apparatus, production and distribution of electricity, electric, electronic and optical equipment.

Bachelors Program and Curriculum in Specialty "Power engineering and electrotechnical systems in agroindustrial complex"

№	The name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1	2	3	4	5	6
I. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training*					
1	Ukrainian language (for professional purposes)	1	108	2,0	3,0
2	History of Ukraine	1	108	2,0	3,0
3	The history of Ukrainian culture	2	72	1,3	2,0
4	Foreign Language	1-2	180	3,3	5,0
5	Philosophy	3	108	2,0	3,0
6	Physical Education **	1-4	360	6,7	10,0
Total for the cycle			***576***	***10,7***	***16***
1.2. Cycle of natural science (fundamental) training					
1	Higher Mathematics	1-3	396	7,3	11,0
2	Applied Mathematics	4	108	2,0	3,0
3	Chemistry	1	72	1,3	2,0
4	Physics	1-3	288	5,3	8,0
5	Engineering and Computer Graphics	1-2	216	4,0	6,0
6	Environmental Science	8	72	1,3	2,0
Total for the cycle			***1152,0***	***21,3***	***32,0***
1.3. Cycle of professional and practical training					
1	Technology of processing and storage of agricultural products	2	108	2,0	3,0
2	Theoretical Foundations of Electrical Engineering	3-5	432	8,0	12,0
3	Electrical materials	3	108	2,0	3,0
4	Electric maschinery	5-6	324	6,0	9,0
5	Theoretical Foundations of Automation	5-6	162	3,0	4,5
6	Electronics and microcircuitry	4	108	2,0	3,0
7	Heat appliances	4	144	2,7	4,0
8	Hydraulics	5	108	2,0	3,0
9	Computers and Computer Technology	6	216	4,0	6,0
10	Engineering Mechanics	3-4	216	4,0	6,0
11	Instrumentation of Metrology	5	108	2,0	3,0
12	Safety	2	54	1,0	1,5
13	Occupational Health	8	54	1,0	1,5
14	Introduction to the profession	1	72	1,3	2,0
15	Fundamentals of electric	6-7	252	4,7	7,0
16	Electrotechnology and lighting	4,7,8	270	5,0	7,5
17	Fundamentals of electricity	6-7	216	4,0	6,0
18	Installation of power equipment and systems control	4	108	2,0	3,0
19	Basics of technical operation of power equipment and controls	7	108	2,0	3,0
Total for the cycle			***3168,0***	***58,7***	***88,0***
Regulatory part, total			**5256,0**	**97,3**	**146,0**
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of professional and practical training					
1	Agricultural machines and equipment	4	180	3,3	5,0
2	Economics and Organization of energy service	7	180	3,3	5,0
3	Fundamentals of energy facilities in agricultural	8	180	3,3	5,0
4	Fundamentals of Entrepreneurship, Management and	6	144	2,7	4,0

	Marketing in agriculture				
5	Diagnosis of power equipment	7	216	4,0	6,0
6	Control and protection devices	6	324	6,0	9,0
Total for the cycle			***1224***	***22,7***	***34***
2.2. Disciplines chosen by students					
2.2.1. Cycle of humanitarian, social and economic training*					
1	Politics	3	72	1,3	2,0
2	Sociology	3	72	1,3	2,0
3	Jurisprudence	7	72	1,3	2,0
4	Cultural	5	72	1,3	2,0
Total for the cycle			***288***	***5,3***	***8***
2.1.1. Cycle of professional and practical training					
1	Technical service electrical	8	216	4,0	6,0
2	Electric vehicles Stations th substations	8	216	4,0	6,0
3	Adjustable electric	8	216	4,0	6,0
4	Electronic devices in control systems	7	216	4,0	6,0
5	Thermal power plant and system	8	216	4,0	6,0
Total for the cycle			***1080***	***20,0***	***30***
Chosen by students, total			**1368**	**25,3**	**38**
Elective part, total			**2592**	**48,0**	**72**
Practical training			**432**	**8,0**	**12**
Degree examination			**360**	**6,7**	**10**
Total, according to the field of study			**8640**	**160,0**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.
**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Annotations disciplines "Ukrainian language (for professional purposes)," "History of Ukraine", "The history of Ukrainian culture", "Foreign Language", "Philosophy", "Physical Education" see. Section 2.1.

1.2. Cycle of natural science (fundamental) training

Higher mathematics. Analytic geometry, linear and vector algebra. Elements of field theory. Functions of a complex variable. Differential calculus. Elements of functional analysis. Integral calculus. Differential Equations. Sequences and series. Harmonic analysis**.**

Applied Mathematics Numerical Analysis. Fundamentals of computational experiments. Elements of the theory of probability. Mathematical Statistics.

Chemistry. The structure of the atom and the periodic law D.I.Mendelyeyeva. Chemical bonding, structure of molecules and crystalline substances. Basic concepts of chemical kinetics and thermodynamics. Solutions. Reactions in solutions of electrolytes. Properties of solutions of non-electrolytes. Fundamentals of electrochemistry. Chemical sources of electric current. Organic compounds. Polymer fuel and lubricants.

Physics. Physical principles of mechanics. Fundamentals of molecular physics and thermodynamics. Electricity and magnetism. Elements of solid state physics. Optics. Nuclear Physics.

Engineering and computer graphics. Descriptive Geometry. Terms and conditions kreslennya.Oformlennya circuitry.

Fundamentals of Ecology. Applied aspects of ecology. Ecological problems of Ukraine and its regions. Strategy and tactics of conservation and sustainable development of life on Earth. Fundamentals of theoretical ecology. Strategy and tactics of conservation and sustainable development of life on Earth**.**

1.3. Cycle of professional and practical training

Technology of production, processing and storage of agricultural products. Technologies crop production. Technology of production of livestock and poultry. Technologies of processing and storage of crop production, livestock and poultry.

Theoretical Foundations of Electrical Engineering. DC circuit. AC circuit. Turn on the RL, RC, RLC circuit on a sinusoidal voltage. Three-phase three-and four leading range of AC. Asymmetry in power grids and measures for its reduction. Asymmetrical loading three-phase transformer and power losses. Transients in electrical circuits.

Electro technical materials. Dielectrics. Conductor and semiconductor materials. Magnetic materials and materials for electronic devices.

Electric maschinery. Electrical Machines DC. Transformers. Asynchronous machines. Synchronous machines.

Theoretical Foundations of automation. Automation systems and elements. Means of automation. Linear systems of automatic control. Nonlinear and optimal automatic control.

Electronics and microcircuitry. Element base electronics. Electronic devices. Amplifiers. Sensors. Regulators.

Heat. Technical Thermodynamics. Fundamentals of Heat Mass Transfer. Thermal power plants and the application of heat in agriculture.

Hydraulics. Hydrostatics and hydrodynamics. Hydraulic machine. Basics of agricultural water supply and drainage.

Computers and computer technology. Computer architecture. Operating systems and software computing technologies. Systems and Technology Management database. Computer networks. Working in local area computer networks and the Internet. Basic programming and algorithmic languages. High-level programming languages. Mathematical package MathCAD. Programming in the mathematical package MathCAD. Computer graphics and image editors.

Engineering Mechanics. Theoretical mechanics. Theory of mechanisms and machines. Mechanics of materials and structures. Machine parts.

Instrumentation of the basics of metrology. Analog gauges. Digital gauges. Methods and tools for measuring electrical, magnetic and non-electrical quantities. Metrology and metrological activities.

Safety. Safety system "man - technology - environment." General concepts of analysis and risk assessment. Means and security measures. Public administration and supervision of Safety. failure of the system. Direct and indirect assessment of harm to people and the environment. Assessment of environmental and social risks of adverse effects.

Occupational Health. Managing health and safety briefings on safety. Analysis of safety in the industry. Fundamentals of physiology of labor. Sanitary requirements and their implementation in the process. Effect of pollutants on the health of employees. State supervision and control of public health and safety. Collective and individual protection workers. Preventive measures to prevent injuries**.**

Introduction to profession. Qualification Requirements Specifications technician electrician and electrical engineer on training in universities. Types of professional graduates. Work with literature and Internet-resources. Inventive and innovative work.

Fundamentals drive. Mechanical and Electrical Specifications DC motors and AC. Transients in electric drives. Adjust the coordinate drive. Power drive. Choice of electric vehicles and electric control and protection. Scheme electric. General procedure for selecting drive.

Electrotechnology and lighting. Basic usage and sources of optical radiation. Lighting installation and network. Oprominyuvalni installation. Physical and technological and electro-physical properties of Agriculture-podarskoyi products and materials. Methods elektronahrivannya. Electric equipment and its calculation. Electro-technological methods of cultivation of agricultural products**.**

Fundamentals of Electric power network. Parameters calculation. Electrical power systems: operation, structure, purpose and choice. Monitoring, protection and control of electrical networks. Reliability, quality and efficiency of power supply systems.

Installation of energy equipment and control systems. Working drawings for elektromon-tazhni roboty.Instrumenty, mechanisms and tools for electrical work. Technology of the main types of electrical work. Planning and organization of electrical work.

Basics of technical operation of power equipment and controls. Legal principles and problems of operation of power equipment. Power equipment in agriculture, optimization and reliability. Maintenance and repair of electrical equipment. The organization commissioning, acceptance testing and operation of rural energy.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.1.1. Cycle of humanitarian, social and economic training

2.1.2. Cycle of professional and practical training

Agricultural machinery and equipment. Machines feeding. Processing enterprises. Systems and equipment poultry. Machines for mechanization of agricultural work.

Economics and Organization of energy services. Operation and service of instrumentation and automation of the enterprise. Methods of preparation of estimates for the construction of energy facilities. Methods of calculating the technical work. Evaluation of economic efficiency engineering solutions.

Fundamentals of energy facilities AIC. Methods of design of electrification, automation and energy in agriculture. Computer technologies in design. Requirements for the project.

Fundamentals of Entrepreneurship, Management, Marketing Agricultural. HR management system in the organization. Analysis and quality of staff turnover. Plan of personnel. Methods of recruitment and selection, assessment of motivation and professional development.

Diagnosis of power equipment. Methods for determining the reliability of electrical equipment. The operational reliability of various types of electrical equipment. Methods for monitoring operability of electrical equipment. The instrument of test measurements and testing of electrical equipment. Modeling emergency modes. Algorithms troubleshooting wares.

Control and protection devices. Equipment hand control. Circuit breakers. Electromagnetic actuators, contactors. Devices of emergency shutdown. Hybrid electric vehicles. Electromagnets. Vacuum switches.

2.2. Disciplines chosen by students

2.2.1. Cycle of professional and practical training

Technical service power equipment. Maintenance and repair of electrical equipment. The organization commissioning, acceptance testing and operation of rural energy. Maintenance of transformer substations and transmission lines**.**

Electric vehicles disconnecting stations and substations, air circuit breakers, electrical grounding devices. Circuit breakers. Contactor. Devices of emergency shutdown. Olives switches. Vacuum switches. Gas circuit breakers.

Adjustable electric. Driving characteristics of machines and mechanisms. Principles and electronic control circuit. Complete sets of equipment for automatic control. Experimental methods of driving characteristics**.**

Adjustable electric. Driving characteristics of machines and mechanisms. Principles and electronic control circuit. Complete sets of equipment for automatic control. Experimental methods of driving characteristics.

Thermal power plant and sources of heat. Combustion of fossil fuels. Boiler systems. Heat. Vodonahrivnyky. Heating systems. Thermal network. Gas agriculture. Alternative sources of supply for agricultural production.

Bachelor
in specialty «AUTOMATION AND COMPUTER-INTEGRATED TECHNOLOGIES»
field of knowledge "Automation and control"

Learning, licensed volume:	
– full-time	50 people
– correspondence	50 people
Apprenticeship	4 years
Credits	240 ECTS
Language of instruction	Ukrainian
Qualifying graduates	Junior Engineer Automation and Computer Technologies

The concept of training

The educational process is based on a systems approach and interdisciplinary training principles to foster students' broadmindedness non-standard thinking, the ability to solve overhead and socio-economic problems and meet the needs of modern production and the labor market.

Practical training

Practical training is carried out in educational and research facilities of the university and the leading enterprises like poultry "Ukraine", "Kiev", "Havrylivski" Greenhouse "Pusha Vodytsya".

Proposed Topics for Bachelor theses

1. Development of automatic control of temperature in the installation for the production of milk.
2. Development of automatic control of temperature in a pigsty, the mother liquor.
3. Development of automatic control of temperature in the greenhouse.

Academic rights of Bachelors - graduates can continue their studies in the Master Programme in specialties signs which are placed in the curricula of undergraduate programs, beginning with the second or third courses:

8. 05020201 - "Automation of technological processes"or field of knowledge 1801 "Specific categories":

8.18010010 «Quality, standardization and certification"
8.18010018 «Administrative Management"
8.18010020 «Management of Educational Institutions"
8.18010021 «Higher School of Pedagogy"

Spheres of Bachelors employment

Activities are subject to generalized systems of automation and computer-integrated technologies. Professionals trained to work in the following sectors: - Engineer with automated production management, Manager - informant - techniques of configuring computer systems.

Bachelors Program and Curriculum in Specialty "Automation and Computer-Integrated Technologies"

№	The name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1	2	3	4	5	6
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training*					
1	History of Ukraine	1	108,0	2,0	3,0
2	Ukrainian language (for professional purposes)	1	108,0	2,0	3,0
3	The history of Ukrainian culture	2	72,0	1,3	2,0
4	Philosophy	3	108,0	2,0	3,0
5	Foreign language	1-2	180,0	3,3	5,0
7	Politics	7	72,0	1,3	2,0
6	Physical Education **	1-4	324,0	6,0	9,0
Total for the cycle			***576***	***10,7***	***16***
1.2. Cycle of natural science (fundamental) training					
1	Environmental Science	3	54,0	1,0	1,5
2	Higher Mathematics	1-4	648,0	12,0	18,0
3	Numerical Methods	2	180,0	3,3	5,0
4	Physics	2-3	360,0	6,7	10,0
5	Chemistry	1	108,0	2,0	3,0
6	Engineering Graphics	2	108,0	2,0	3,0
7	Computer Technology and Programming	3	360,0	6,7	10,0
Total for the cycle			***1818***	***34***	***51***
1.3 Cycle of professional and practical training					
1	Safety	3	72,0	1,3	2,0
2	Electrical engineering and electrical engineering	3-4	180,0	3,3	5,0
3	Electronics and microprocessor technology	4-5	252,0	4,7	7,0
4	Design automation systems	7	288,0	5,3	8,0
5	Theory of automatic control	5-6	360,0	6,7	10,0
6	Technical automation	6	288,0	5,3	8,0
7	Metrology, measuring and technological equipment	4-5	288,0	5,3	8,0
8	Identification and Simulationtechnological objects	7	180,0	3,3	5,0
9	Automation of technological processes and productions	6	252,0	4,7	7,0
10	Basics of labor protection	7	54,0	1,0	1,5
Total for the cycle			***2214***	***41***	***62***
Regulatory part, total			**4680**	**87**	**130**
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of professional and practical training					
1	Mathematical modeling of computer	5	72,0	1,3	2,0
2	Software Computer Integrated Technologies	7	72,0	1,3	2,0
3	Office and communication equipment	8	72,0	1,3	2,0
4	Computer Graphics	3	108,0	2,0	3,0
5	Programming real-time	8	72,0	1,3	2,0
6	Introduction to the profession	1	72,0	1,3	2,0
7	Information theory	6	90,0	1,7	2,5
8	Technology of production, storage and processing of agricultural products	1-2	126,0	2,3	3,5
9	Fundamentals of electrical materials	2	72,0	1,3	2,0
10	Fundamentals of computer use	1	90,0	1,7	2,5
11	Computer Integrated Technologies	4	90,0	1,7	2,5
12	Instrumentation Control Systems	5	90,0	1,7	2,5
13	Instrumentation and Control	7	90,0	1,7	2,5
14	Hydro gas dynamics	4	90,0	1,7	2,5
15	Thermodynamics and Heat Engineering	5	90,0	1,7	2,5

16	Typical technological objects and processes of production	5	72,0	1,3	2,0
17	Adaptive control systems and control	8	72,0	1,3	2,0
18	Electrical technologies in agriculture	7	72,0	1,3	2,0
19	Automatic Electric	8	72,0	1,3	2,0
20	Reliability and diagnostics	6	72,0	1,3	2,0
21	Modeling and optimization of systems control	8	72,0	1,3	2,0
22	Digital control systems	8	90,0	1,7	2,5
23	Basics of technical operation	8	72,0	1,3	2,0
24	Basic research	8	72,0	1,3	2,0
25	Theoretical Mechanics	2	72,0	1,3	2,0
26	Descriptive Geometry	1	90,0	1,7	2,5
27	Applied Mechanics and Design Principles	4	108,0	2,0	3,0
28	Economy automated production in agriculture	8	72,0	1,3	2,0
29	Fundamentals of Management, Marketing and Business	7	72,0	1,3	2,0
30	The IP device management systems	6	90,0	1,7	2,5
31	Electrical machinery and micromachines	5-6	126,0	2,3	3,5
Total for the cycle			***2592***	***48***	***72***
2.2. Disciplines chosen by students					
2.2.1. Cycle of humanitarian, social and economic training*					
1	Economic theory	5	72,0	1,3	2,0
2	Sociology	7	72,0	1,3	2,0
3	Jurisprudence	6	72,0	1,3	2,0
4	Psychology	8	72,0	1,3	2,0
5	Religions	4	72,0	1,3	2,0
Total for the cycle			***360***	***7***	***10***
2.2.2. Cycle of professional and practical training					
1	Elements and functional unitsinformation-processing systems	8	72,0	1,3	2,0
2	Computer Software, Network and System	7	72,0	1,3	2,0
3	Fundamentals of Systems Analysis	8	72,0	1,3	2,0
4	Electronic converters	7	72,0	1,3	2,0
Total for the cycle			***288***	***5***	***8***
Chosen by students, total			**3240**	**60**	**90**
Practical training			**540**	**10**	**15**
Degree examination			**180**	3,3	**5**
Total, according to the field of study			**8640**	**160**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.
**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Annotations disciplines "Ukrainian language (for professional purposes)," "History of Ukraine", "The history of Ukrainian culture", "Foreign Language", "Philosophy", "Physical Education" see. Section 2.1.

1.2. Cycle of natural science (fundamental) training

Ecology. Legal and organizational questions of natural environment protection. Theoretical bases of ecology. Global problems of ecology: problems of the population, power resources exhausting, the physical contents of " Greenhouse effect ", the physical contents of formation Ozone gaps. Concept of toxic substances. Hydrosphere protection. Atmosphere protection. Ecological monitoring systems. The agricultural production and its influence on the environment. Economic and legal aspects of rational wildlife management. Power and its influence on the environment. Bases of without waste technologies. Ecological examination of projects and technologies. Economic efficiency of nature protection actions.

Higher mathematics. Elements of linear, vector algebra and analytical geometry. Differential calculus of function of one and several variables. Complex numbers. Transformation Laplas, numbers on orthogonal system, conformity between operations above originals and images. Integral calculus of function of one and several variables. Differential equations, differential equations systems. Numerical and functional numbers. The harmonious analysis.

Numerical methods - linear system of algebraic equations. Elementary transformation system. The algorithm of Gauss method and its application. Harmonic analysis. Methods of data processing.

Physics. Physical foundations of classical mechanics. Foundations of molecular physics and thermodynamics. Electricity and Magnetism. Physics of oscillations and waves. Optics. Basics of Atomic physics and Quantum mechanics. Principles of solid state physics. Theory of relativity. Basics of nuclear physics and nuclear energy.

Chemistry. Structure of atoms, molecules, substances, their modular condition. Chemical reactions. Solutions of electrolytes and non-electrolytes. Corrosion and protection of materials and alloys. Concept PH. Electrochemical processes.

Engineering Graphics. Projective drawing. Views, cuts and intersects. Sketches and working drawings. Assembly drawing. Detail drawing. The drawing by means of AutoCAD system.

Programming and Algorithmic Languages. Algorithmic languages and methods of programming. Application of algorithmic languages. Bases of programming low -level and high.- level languages Application of programming in engineering activity.

1.3. Cycle of professional and practical training

Safety of Vital Activity. Safety in system „ a person-technic-environment ". The concept of the human factor. General provisions of the analysis and risks estimation. Logic construction of events. Quality – the safety category. Means and actions of safety. The passport of substance, materials safety. The passport of object risk.

Electrical Technology and Electromechanics. Electrical and magnetic fields Electrical circuits. Calculation of direct current electrical circuits Multi-poles network. Nonlinear circuits. Calculation of circuits at alternative currents and voltage. Transients in linear circles and their calculation. Calculations of nonlinear circuits. Transients in nonlinear circuits.

Electronics and Microcircuitry. Passive electronics elements. Semi-conductor diodes, transistors, thyristors. Photoelectric, optical electronic and indicator devices. Electronic amplifiers. Digital and impulse devices. Techniques of feeding system. Microprocessor devices.

Designing Systems of Automatics. Automation circuits, choice of methods for complex technical automation facility during designing and automation system analysis.

Theory of Automatic Control. Automation systems, the classification. Components of system. Static and dynamic characteristics. Dynamic links. The characteristics of system elements and control objects Linear systems. The schemes, transfer functions. Conditions and measure of resistance. Adjustment quality. Synthesis. Statistical analysis. Nonlinear systems. Research by methods of fitting, to phase–plane portrait, harmonious linearization. Statistical linearization. Stability.

Automation Facilities. State device system. Sensors. Automation amplifiers. Logical elements. Actuating elements. Automatic controllers.

Metrology and Instrumentations. The legislative and normative acts in metrology. General problems of measurement and errors. The theory and practice of measurement precision and measurement systems. Analogue measuring apparatuses. Measuring mechanisms. Registering devices. Digital devices. Measuring of electrical and magnetic magnitude.

Identification and Simulation of Technological Objects. The classification of technological and manufacturing processes as objects of automatic control. Construction of static and dynamic objects of agricultural technological processes and production.

Automation of Standard Technological Processes. Classification and structure of the modern atomic technological processes; the basic automatic characteristics of standard technological processes; automation problems in standard technological processes; automation of specific standard technological processes.

Labour Protection. Legislative and normative base of Ukraine about labour protection. Public management by labour protection and organization of labour protection at work. Labour protection instruction. State inspectors and social protection control, examination and registration accidents, occupational diseases; diseases and damages at work. Analysis, prediction, preventive measures of industrial injures and occupational diseases at work.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.1.1. Cycle of professional and practical training

Mathematical Modeling on PC. The types of the mathematical models, their use for declaration of static and dynamic characteristics of objects. The methods of the analysis of models on the COMPUTER .

Software of Computer-Integrated Technologies. Project of systems on the basis of personal digital computers and reference to the object, projection automation systems of programmed logical controllers, computer-aided design and modeling of the electronic chips.

Office Equipment and Communication Facilities. The basic stages of the development communication. Telephone communication. Telegraphy. Radio communication, radio-signals, radio sets and receivers. Lines of communication, E-mail, computer networks. Communication service in agriculture.

Computer Graphics. Application of the computer graphics Software for PC graphics. AutoCAD system. Computer graphics problems.

Programming of Real Time Systems. Areas and techniques of programming real time systems in engineering activity. Programming of real- time systems to be used in agricultural production. Practical realization of introduction of real time system.

Introduction to the Specialty. Working activity of future specialist in automation of technological processes in agriculture. Methods of tutoring under the supervisor and on his/her own. Rules of behavior of the student in lecture-rooms, hostel, in public places.

Information Theory. Entropy as indeterminate system status. Entropy and information. Methods of coding information. Information and code length, that provides desired reliability under designed noise level. Computation of channels capacity and control.

Production Technology, Maintenance and Processing of Agricultural Production. Economic value, state and basic ways of development of agriculture and animal husbandry today. Technologies in agriculture. Technologies in animal husbandry. Technologies of processing and storage of agricultural products.

Science of Electromaterials. Constructional, ferromagnetic, conducting and insulation materials. Physical-mechanical, electrochemical, structural and thermal characteristics of materials. Manufacturing technology and fields of application.

Fundamentals of PC Usage. Modern situation and progress trend of computer technologies. Program environment, word processors. The graphics editors. Data base management system.

Computer-Integrated Technologies. Work in Windows, Word processor, Excel processor, graphics editors, data base management system by Access, scan and image understanding, work in computer network, MathCad computation system.

Instrumentations of Control Systems. Control and measuring devices as compound control systems. Secondary transformers. Logometers and millivoltmeters. Measuring bridges. Potentiometers and devices with differential transformer connection. Secondary devices.

Automatic Control Systems. Classification and structure of modern ACS; types of supply of ACS; ACS of specific objects and production processes in animal-husbandry, plant-growing and fodder production; the functional automation schemes; formulation of problems of ACS.

Hydraulic Gas Dynamics. Dropping fluid and gases. Free, compressible flow. Continuity of flow. Bernoulli's equation. Modes of motion. Hydraulic resistances. Electrohydrodynamics analogy. Transients in pipelines. Fluid and gas flow. Aerodynamics of ventilating systems.

Thermodynamics and Heat-Engineering. Thermal and state parameters. Thermal and dynamic processes. Thermodynamic processes. The first and second principle of thermodynamics. Humid air. Cycles of heat engines and refrigerator machines. Heat exchange theory. Heat conduction, Convention. Thermal radiation. Heat exchange devices. Thermal energy sources. Boiler plant. Heat generators. Physic of heat of agricultural buildings. Heating, ventilating, conditioning. Thermal product treatment. Renewable energy sources: solar energy, wind energy, biogas, energy conservation technologies.

Standard Technological Objects and Processes of Production. State, basic concepts and definition concerning control of technological processes, as automation objects; the requirements to technological objects; classification, structure and basic characteristics of standard technological objects and production processes; standard objects and production processes.

Adaptive Control and Monitoring Systems. Classification of adaptive systems and principles of construction. Methods and algorithms of identification of dynamic systems. Systems of optimizing control. Adaptive systems with model. Hierarchical sub-optimal ACS. Algorithms of alternative choice in problems of adaptive control. by final homogeneous Markow chains.

Electrotechnology in AIC. Fundamentals of transforming electrical energy into thermal. Calculation of electrical heat equipment. Thermo-electric heating dielectric, direct, indirect, inductive, dielectric, thermoelectric heating.

Automatic Electric Drive. Electric drive structure. Individual electric drive. Multimotor electric drive. Reversing and irreversive electric drives. Regulating and irregulating electric drives. The automatic drive of operating mechanism. Automatic electric drive. Power transformers, microprocessors and micro-controllers in automatic electric drive.

Reliability and Diagnostics. Reliability indexes. Analytical reliability methods by the results of experiments. Definition of reliability during the development and operation of automation systems. Technical diagnostics of facilities and systems of automation. Economic aspects of reliability.

Simulation and optimization of control systems - Setting optimal control problems, the model result with different methods of determining the optimal programs and construction of optimal regulators. Methods of optimal control theory: the calculus of variations, the principle of maximum, dynamic programming, analytic construction of optimal regulators and methods of constructing optimal systems with stochastic perturbations.

Digital Control Systems. Discrete signals, their encoding. Analog transducer and digital transducer, quantum. Z- and W-transformation. Space-condition method. The analysis in time and frequency domains. Running and supervision. Synthesis of digital systems. Limitation in micro-process management system.

Fundamentals of Electrical Machinery Operation. Concept and definition of the operation. The normative and operational documents. Requirements for electrical machinery operation. Fundamentals of rational choice and use of equipment. Reliability in technique, calculations of reliability. Start-adjusting operations, putting in operation. Preventive control of electrical equipment. Planned preventative repair and maintenance of electrical equipment. Rational use of power resources.

Fundamentals of Scientific Researches. The content and principles of scientific researches. The program and research methods. The scientific report. Introduction of researches into production.

Theoretical mechanics. Mechanics. Theory of mechanisms and machines. Mechanics of materials and structures. Machine parts**.**

Descriptive Geometry. purpose of the discipline "Descriptive Geometry" - to teach future professionals agricultural read and execute drawings of parts of machines, mechanisms and structures; analyze geometric shapes of objects, abstract, logical and spatial thinking.

Applied Mechanics and Principles of Designing. Role of mechanics of machines and mechanisms in formation of engineering thinking for the development of new devices, mechanisms and machines. The basic programs: — theoretical mechanics, strength of materials, theory of mechanisms and machines, components. Assignment for practical training.

Economics of Automated Productions in AIC. Basic and turnover funds. Material and technical supply of AIC. Profit and profitability. Inter-economic planning. Organization of designing, mounting and operation of power engineering objects. Rate setting, wages and salary.

Fundamentals of Management, Marketing and Business. The main features of market system. The basic fundamentals of energy-market in Ukraine. Legal fundamentals of property and privatization. Entrepreneurship, as a system of service, production and funds. Principles of management. Communications, models and methods of decision making in management. Business-planning. Marketing, as a system. The strategies of marketing. Marketing services in power-engineering.

Devices of Control Systems. Classification. The basic parameters and characteristics. Features of design realization. Ways of control. Labeling. Choice: electrical, pneumatic, hydraulic control devices.

Electrical Machines and Micromachines. Machines of direct and alternating current and transformers. Construction, theory, operating mode and characteristics. Selsyns. Rotary transformers. Steppers. Micromachines hydroscopic devices.

2.2. Disciplines chosen by students

2.2.1. Cycle of natural science (fundamental) training

Psychology. Psychology of societies Principles of Constitutional Law Jurisprudence Ukraine Ownership

2.2.2. Cycle of professional and practical training

Elements and functional components of information-processing systems. General information about the technological dimension. Measuring transducers non-electrical quantities. Classification of transducers. Selection of tools and measurements. Measurement of velocities and accelerations. Measuring torque measurement of mechanical work and power. Temperature measurement. Measurement of humidity, pressure. Measurement level. Measurement of power consumption and energy.

Computer software and network systems - Scope PCs and computer technology, the basics of the software, database management systems. Working in a computer network. Scan. Computer drawing among AutoCAD. Programming Languages.

Fundamentals of System Analysis. The basic concepts and definition of systems analysis. The basic methods, procedures, stages. Indication of management systems. Structural analysis of control systems. Subsystems and optimization of structure. Information characteristics of systems. Decision making.

Electronic Transducers. Theoretical fundamentals of electronic transducers. The typical electronic transducers to be used in agricultural production Choice of electronic transducers with minimum expense of power resources. Rational use of electronic transducers. General methods of fault detection in electronic transducers.

Bachelor
in specialty «ELECTRICAL ENGENEERING AND POWER TECHNOLOGIES»
field of knowledge "Electrical and electro mechanics"

Learning, licensed volume:	
– full-time	25 people
Apprenticeship	4 years
Credits	240 ECTS
Language of instruction	Ukrainian
Qualifying graduates	A technician electrical

The concept of training

The educational process is based on a systems approach and interdisciplinary training principles to foster students' broadmindedness non-standard thinking, the ability to solve overhead and socio-economic problems and meet the needs of modern production and the labor market.

Practical training

Practical training is carried out in educational and research facilities of the university and the leading enterprises like poultry "Ukraine", "Kiev", "Havrylivski" Greenhouse "Pusha Vodytsya" PAT "Kyyivsilelektro" PAT "Kyyivelektromontazh" companies "Oblenergo" .

Proposed Topics for Bachelor theses

1. Electricity from solar panels poultry and connect to GP "Energy".
2. The reconstruction project of transformer substation Belotserkovskoy CHP.
3. Improving the reliability of transmission lines 038 kV at the use of self-holding insulated wires.
4. Research of distributed generation sources in parallel operation with the grid.
5. Upgrade relaying based on microprocessor MISOM

Academic rights of Bachelors graduates can continue their studies in the Master Programme in specialties signs which are placed in the curricula of undergraduate programs, beginning with the second or third courses:

8.05070103 - "electrical power system"or field of knowledge 1801 "Specific categories":

8.18010010 «Quality, standardization and certification"
8.18010018 «Administrative Management"
8.18010020 «Management of Educational Institutions"
8.18010021 «Higher School of Pedagogy"

Spheres of Bachelors employment

Professionals trained to work in the following sectors: installation, repair and maintenance of electric motors, generators, transformers, electricity distribution and control apparatus, production and distribution of electricity, electric, electronic and optical equipment.

Bachelors Program and Curriculum in Specialty "Electrical engineering and power technologies"

№	The name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1	2	3	4	5	6
I. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training *					
1	History of Ukraine	2	108	2,0	3
2	Philosophy	2	108	2,0	3
3	Ukrainian language (for professional purposes)	1	108	2,0	3
4	Foreign Language	1-4	216	4,0	6
5	The history of Ukrainian culture	1	72	1,3	2
6	Politics	8	72	1,3	2
7	Physical Education **	1-4	360	6,7	10
Total for the cycle			**576**	**10,7**	**16**
1.2. Cycle of natural science (fundamental) training					
1	Ecology	3	72,0	1,3	2,0
2	Higher Mathematics	1-4	540,0	10,0	15,0
3	General Physics	1-3	288,0	5,3	8,0
4	Chemistry	1	144,0	2,7	4,0
5	Technical mechanics	2	144,0	2,7	4,0
6	Theory of automatic control	3-4	216,0	4,0	6,0
7	Computers and algorithmic languages	1-3	252,0	4,7	7,0
8	Principles of Management	8	108,0	2,0	3,0
9	Engineering Graphics	1-2	180,0	3,3	5,0
10	Technology of construction materials	3	108,0	2,0	3,0
Total for the cycle			**2052**	**38**	**57**
1.3. Cycle of professional and practical training					
1	Occupational Health	7	144,0	2,7	4,0
2	Theoretical Foundations of Electrical Engineering	3-5	468,0	8,7	13,0
3	Industrial Electronics	5	144,0	2,7	4,0
4	Electric maschinery	5-6	252,0	4,7	7,0
5	Electrical materials	4	216,0	4,0	6,0
6	Metrology and electrical measurements	4	144,0	2,7	4,0
7	Introduction to speciality	1	108,0	2,0	3,0
8	Mathematical problems of energy	5-6	288,0	5,3	8,0
9	Electrical systems and networks	5-8	648,0	12,0	18,0
10	High Voltage Engineering	7	144,0	2,7	4,0
11	Economy and production	5	144,0	2,7	4,0
12	Power equipment of power	4	162,0	3,0	4,5
13	Electrical stations and substations	8	288,0	5,3	8,0
14	Transients in power	7	180,0	3,3	5,0
15	Reliability and design of electrical systems	7-8	216,0	4,0	6,0
16	Expert systems for decision-making in the energy sector	7	180,0	3,3	5,0
17	Safety	6	144,0	2,7	4,0
18	Fundamentals of mechanical parts LEP	6	144,0	2,7	4,0
Total for the cycle			***4014***	***74***	***112***
Regulatory part, total			**6750**	**125**	**188**
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of professional and practical training					
1	Diagnostics, and electrical repair	6-7	234,0	4,3	6,5
2	Basic research	8	108,0	2,0	3,0
3	Basics of installing power lines	5	180,0	3,3	5,0
4	Thermotechnics	3	144,0	2,7	4,0

5	Computers and computer technology	1,7,8	216,0	4,0	6,0
Total for the cycle			***882***	***16***	***25***
2.2. Disciplines chosen by students					
2.2.1. Cycle of humanitarian, social and economic training					
1	Psychology	5	72,0	1,3	2,0
2	Sociology	6	72,0	1,3	2,0
3	Essentials of economic theory	6	72,0	1,3	2,0
4	Fundamentals of Law	8	72,0	1,3	2,0
Total for the cycle			**288**	**7**	**8**
Elective part, total			**1170**	**23**	**33**
Practical training			**540**	**15**	**15**
Degree examination			**180**	**5**	**5**
Total, according to the field of study			**8640**	**168**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.
**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Annotations disciplines "Ukrainian language (for professional purposes)," "History of Ukraine", "The history of Ukrainian culture", "Foreign Language", "Philosophy", "Physical Education" see. Section 2.1.

1.2. Cycle of natural science (fundamental) training

Ecology. Applied aspects of ecology. Environmental problems of Ukraine and its regions. Strategy and tactics of preservation and stable development of life and the Earth. Bases of theoretical ecology.

Higher mathematics. Elements of linear, vector algebra and analytical geometry. Differential calculus of function of one and several variables. Differential equations, systems differential equations. Numbers numerical and functional, the harmonious analysis.

General physics. Physical principles of classical mechanics. Bases of molecular physics and thermodynamics. Electrostatics. Constant electric current. Electromagnetics. Physics of fluctuations and waves. Wave optics. Quantum optics. Physics of atom and experimental bases of nuclear mechanics. Elements of solid physics. The theory of relativity concept. Elements of nuclear and nuclear power physics.

Chemistry. Structure of atoms, molecules, substances, their modular condition. Chemical reactions. Solutions of electrolytes and non-electrolytes. Corrosion and protection of materials and alloys. Concept PH. Electrochemical processes.

The technical mechanics. Bases of mechanics, machines and mechanisms role in formation of culture of engineering thinking with the purpose of development of opportunities of new devices, mechanisms and machines design. The basic program positions - the theoretical mechanics, materials resistance, the theory of mechanisms and machines, details of machines. The task for practical training, independent work and the task for rated - graphic works.

Automatic Control Theory. Mathematical model of automatic control. Evaluation systems. Defining quality of automatic control systems. Identification and analysis of automatic control systems with nonlinear elements.Computer facilities and algorithmic languages.

Computer facilities in electric power industry. Comparison of operational systems. External devices. Computer intelligence systems. Computer and algorithmic languages. Algorithm and programs.

Bases of management. Basic features of market system. Main principles of power in Ukraine. Economic - legal bases of the property and privatization. The enterprise, as a system. Strategy of marketing. Marketing ways of braking up organizational systems of electric complex management. The analysis of algorithmic systems of electropower complex management.

Engineering Graphics. Projective drawing. Views, cuts and intersects. Sketches and working drawings. Assembly drawing. Detail drawing. The drawing by means of AutoCAD system.

Technology of constructional materials. Constructional, iron-core, conductor and isolation materials. Physical and `mechanical, electrochemical, structural and thermal characteristics of materials. Manufacturing techniques and branches of application.

1.3. Cycle of professional and practical training

Labour Protection. Normative and legislative base of Ukraine on labour protection. Labour protection instruction. Investigation and registration of accidents, professional diseases and damages during the operation. Analysis, prediction, preventive measures of industrial injuries and professional diseases at work.

Theoretical bases of electrical engineering. Linear circles of direct current. Linear circles of sine current. Linear circles of sine current at magnetic connection. Linear of non-sine circles. Three-phase circles. Nonlinear circles. Two-port networks. Transients. Circles with the distributed parameters. An electromagnetic field of electro technical devices. Calculations of electromagnetic fields and electric circles on computers. Synthesis of electric circles.

Industrial electronics. Passive components of electronic circuits. Diodes and their models. Transistor schemes. Feedback. The operational amplifier. Characteristics of logic integrated schemes families. Digital microcircuits.

Electric machines. Direct-current machines and transformers. Design, the theory, modes of operation and characteristics.

Electro technical materials. General questions of electro technical materials using. Properties of dielectrics. Conductor and semiconductor materials. Magnetic mediums.

Bases of metrology and electric measurements. Metrology in science and engineering. Measures of physical and technical quantities. Bases of the measurement theory. Measuring examples of different systems. Measurement. Measuring information systems.

Introduction into a specialty. Scientific and technical information on specialty.

Mathematical problems of power engineering. Analytical methods of mathematical modeling of manufacture objects. Construction of typical objects models on experiment results. Algorithms of realization of models on computers. Euler, Runge-Cutta's algorithms.

Electric systems and networks. Design of electrical networks. Equivalent circuits and modes of electrical networks operation. Calculations of networks constant modes. Regulation of voltage. Modes of distant transfers and their management. Regulation of frequency. Energy conservation in electrical networks.

Engineering of high voltage. Over-voltages and their classification. Concept about thunderstorm. Atmospheric over-voltage. Movement of over-voltage waves through transmission lines of electro-supply system. Movement of waves through transformers and machines windings. Lightning conductor of electric installations. Protection of direct strokes from thunder-storm and secondary recover isolation. The equipment of an over-voltage protection.

Economy and the organization of manufacture of the electric power. Economic efficiency of capital investments in power. Economic mechanism. Work and wages planning in power engineering. Profit, profitability, financial activity in electricity. Power planning. Renewal of the basic incomes expenses.

Electric frequency of stations and substations. The general information on power plants and substations. Switching off of heavy currents. The switch-board. Operation modes of buses and their parameters. Instrument transformers. Power transformers and autotransformers. Electric circuits. Systems of measurement, control, signal and gradation.

Transients in power engineering. Kinds of transients. The general information about transitive process. Mathematical methods of networks analysis. Stability of electric system mode. Criteria of system stability. Asynchronous modes, actions on electric systems stability increase.

Reliability and design of electric systems. Principles of power plants design, substations and transmission lines. The organization and design techniques. Reliability of electric systems. The main electric circuits and the choice of basic electric equipment Lightning conductor in systems.

Safety of Vital Activity. Safety in system «a person-technic-environment». The concept of the human factor. General provisions of the analysis and risks estimation. Logic construction of events. Quality – the safety category. Means and actions of safety. The passport of substance, materials safety. The passport of object risk.

Bases of design of mechanical part LET. Wires and cables of LET. Rated conditions. Tightness and an arrow of sagging of LET. Wire attraction calculation while constructing one of the phases of support durability calculation.

Expert systems for decision-making in the energy sector - energy system. Finding solutions in expert systems. Prediction. Diagnosis. Dataware.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.1.2 Cycle of professional and practical training

Diagnosis maintenance and repair of electrical equipment. Methods for determining the reliability of electrical equipment. The operational reliability of various types of electrical equipment. Methods for monitoring operability of electrical equipment. The instrument of test measurements and testing of electrical equipment. Modeling emergency modes. Algorithms troubleshooting wares. Bases of scientific researches. Main principles of scientific researches. Choice of a scientific direction and research theme.

Bases of installation of LET. Manufacture engineering preparation. Work planning. Form of work organization. Installation of TS. Technology of LET installation. Installation of cable lines. Repeated grounding. Mechanization of work on TS, LET construction, Installation of automatic, protection and signal system means. Installation of earthlings devices.

Heat-process engineering. Technical thermodynamics. Bases of the theory of heat exchange. Heat power installations. Fuel and processes of burning. Heat generated installations. Boilers. Warm generators. Compressor installations. Warm using.

Computers and computer technologies. Sphere of computer and computer technologies using, basis of software, control systems of database. Work in computer network. Scanning. The computer drawing in AutoCAD environment. Programming languages.

2.2. Disciplines chosen by students

2.2.1. Cycle of professional and practical training

Technical service power equipment. Power equipment in agriculture, optimization and reliability. Maintenance and repair of electrical equipment. The organization commissioning, acceptance testing and operation of rural energy. Maintenance of transformer substations and transmission lines. Servicing of electrical consumers.

Adjustable electric. Drivers characteristics of machines and mechanisms. Principles and electronic control circuit. Complete sets of equipment for automatic control. Experimental methods of driving performance

Electronic devices in control systems - Development and debugging microprocessor systems in agricultural production. Discrete signals, their coding. DAC and ADC. Synthesis of digital systems.

Thermal power plant and systems - sources of heat. Combustion of fossil fuels. Boiler systems. Heat. Heating systems. Thermal network. Gas agriculture. Alternative sources of supply for agricultural production.

2.9. EDUCATIONAL AND RESEARCH INSTITUTE OF LAND RESOURCES AND JURISPRUDENCE

Director, Doctor of Law, Professor Volodymyr Kurylo
Tel.: (044) 259-97-31, E-mail: llp_nni_director@twin.nauu.kiev.ua
Location: Kyiv, Vasylkivska str., 17, educational building No.6, room 212

FACULTY OF LAND MANAGEMENT

Dean - Ph.D., Associate Professor, Dorosh Olga
Tel.: (044) 258 -05 -25, E-mail: landuse_dean@twin.nauu.kiev.ua
Location: building No. 6 room 219

The faculty organizes and coordinates the educational process of bachelovs in specialty:

6.080101 "Geodesy, Cartography and Land Management"

Departments for training master students:
Geodesy and Cartography.
Tel.: (044) 258-05-25, E-mail: kovalchukip@ukr.net,
Head - Doctor of Geographical Sciences, Professor Ivan Kovalchuk

Land Resources Administration Management.
Tel.: (044) 527-89-78 E-mail: Uzr_k@ukr.net,
Head - Doctor of Economics, Professor
Dmytro Dobryak

LAW FACULTY

Dean – Candidate of Science in Law, Associate professor
Yara Olena Sergiivna
Tel.: (044) 259-97-25, E-mail: lawyer_dean@twin.nubip.edu.ua
Location: building № 6, room 231

The faculty organizes and coordinates the educational process of bachelors in specialty:

6.030401 «Jurisprudence»

Graduating department:
Theori and History of State and Law Tel.: (044) 259-97-25
E-mail: historylaw_chair @twin.nubip.edu.ua
Head of the department – Candidate of Science in Law, Associate professor, Kachur Vira Olegivna

Civil and Economic Law Tel.: (044) 259-97-25
E-mail: civillaw_chair@twin.nubip.edu.ua
Head of the department – Candidate of Science in Law, Associate professor, Pankova Liliya Oleksandrovna

Agrarian, land and environmental law named after V.Z.Yanchuk
Tel.: (044) 259-97-25, E-mail: agrolaw_chair @twin.nubip.edu.ua
Department Head – Doctor of Law, professor
Yermolenko Volodymyr Mykhaylovych

Bachelor
in specialty "GEODESY, CARTOGRAPHY AND LAND MANAGEMENT"
field of knowledge "Geodesy and Land Management"

Licensed number of students:	
– full time students	90 persons
– by correspondence	85 persons
Training duration	4 years
Credits	240 ECTS
Language	Ukrainian, English
Qualifications graduates	Bachelor in Geodesy, Cartography and Land Management

The concept of training

The concept of training in "Geodesy, Cartography and Land Management" is to build systematic knowledge in topography, geodesy, photogrammetry, cartography, land management and geoinformation technologies. During training, students receive the skills for creating various cartographic materials: cadastral and topographical plans and maps, creating and filling databases for various geographic information systems, as well as obtain knowledge in Land Management, Land Cadastre and Land Law.

Practical training

Curriculum of training on direction "6.080101 - Geodesy, Cartography and Land Management" includes educational-practical training on: computer science and programming, topography, surveying, agriculture, photogrammetry and remote sensing, surveying for land management, and practical training in land management and land cadastre. The aim of the trainings is to provide skills of practical knowledge of students with modern methods, forms of organization and tools in their future profession, forming their professional skills to make their own professional decisions for work in the real world, education needs to systematically supplement their knowledge and apply them in their practice activity.

Academic rights of Bachelors. After graduating, students can continue their studies on the programs of master's degrees on specialties, which are linked in the curricula with the bachelor programs, beginning from the second-third courses of studies :

8.08010103 Organization of the use of land and cadastre ,

or by specialties of area 1801 the "Specific categories":

8.18010010 – "Quality, standardization and certification"

8.18010018 – the "Administrative management"

8.18010020 – "Management educational establishment"

8.18010021 – "Pedagogic of higher school"

Spheres of Bachelors employment

Surveying for the compilation of topographic maps and plans, surveying work related to cadastre, mapping work and data collection, including the use of remote sensing, surveying work in industry and civil engineering, monitoring, economics and legal assessment of land and property.

The specialist may hold primary positions as technician or junior engineer.

Bachelors Program and Curriculum in Specialty" "Geodesy, Cartography and Land Management"

No	The name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training*					
1.	History of Ukraine	1	108	2,0	3,0
2.	Ukrainian language (for professional purposes)	2	108	2,0	3,0
3.	History of Ukrainian Culture	1	72	1,6	2,0
4.	Philosophy	3	108	2,0	3,0
5.	Foreign Language	1,2	180	3,3	5,0
6.	Physical education	1,2,3,4	270	5,0	7,5
Total for the cycle			***576***	***10,9***	***16,0***
1.2. Cycle of natural science (fundamental) training*					
1.	Higher Mathematics	1, 2,3	594	11,0	16,5
2.	Physics	1,2	324	6,0	9,0
3.	Computer Science and Programming	1,2,3	252	4,6	7,0
4.	Fundamentals of Ecology	3	54	1,0	1,5
5.	Life Activities Safety	4	72	1,3	2,0
6.	Metrology and Standardization	6	54	1,0	1,5
7.	Geology and geomorphology	1	90	1,6	2,5
8.	Electronic surveying instruments	8	108	2,0	3,0
9.	Mathematical Methods and Models	7	108	2,0	3,0
10.	Occupational Health	5	54	1,0	1,5
Total for the cycle			***1656***	***31,5***	***47,5***
1.3. Cycle of professional and practical training *					
1.	Topography	1,2	324	6	9,0
2.	Geodesy	3,4	360	6,6	10,0
3.	Photogrammetry and Remote Sensing	5,6	216	4,0	6,0
4.	Satellite Geodesy and spherical astronomy	6	108	2,0	3,0
5.	Higher Geodesy	5	162	3,0	4,5
6.	GIS and Databases	5	180	3,3	5,0
7.	Mathematical processing of geodetic measurements	4	126	2,3	3,5
8.	Investment Analysis	6	90	1,6	2,5
9.	State Land Cadastre	4	108	2,0	3,0
10.	Cartography	7	108	2,0	3,0
11.	Land Law	7,8	108	2,0	3,0
12.	Financial and economic activities	7	90	1,6	2,5
13.	Organization and management of production	8	108	2,0	3,0
Total for the cycle			***2088***	***38,6***	***58,0***
Regulatory part, total			**4320**	**81,0**	**121,5**
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of natural science (fundamental) training*					
1.	Land Reclamation	4	126	2,3	3,5
2.	Soil Science and the basics of Agrochemistry	2	252	4,6	7,0
3.	Agriculture	4	108	2,0	3,0
4.	Crop Science	4	108	2,0	3,0
2.1.2. Cycle of professional and practical training *					
1.	Land Cadastre	5,6,7	487	9,0	13,5
2.	Land Management	5,6,7,8	630	11,6	17,5
3.	Geodetic works in Land Management	5,6	180	3,3	5,0
4.	Fundamentals of Land Resources Management	8	144	2,6	4,0

5.	Automated Cadastral System	7	126	2,3	3,5
	Total for the courses selected by the University		2161	39,7	60
	2.2. Disciplines chosen by students				
	2.2.1. Cycle of humanitarian, social and economic training*				
1.	Psychology	3	108	2,0	3,0
2.	Theory of Economics	4	72	1,3	2,0
3.	Law	5	108	2,0	3,0
4.	Sociology	6	90	1,6	2,5
5.	Politology	7	90	1,6	2,5
Total for the cycle			***450***	***9,0***	***12,5***
	2.2.2. Cycle of natural science (fundamental) training*				
1.	Agroforestry amelioration	8	108	2,0	3,0
2.	Inventory of settlements	8	108	2,0	3,0
3.	Infrastructure Engineering of Territories	4	108	2,0	3,0
4.	Digital maps and plans	6	108	2,0	3,0
Total for the cycle			***432***	***8,0***	***12,0***
	2.2.3. Cycle of professional and practical training *				
1.	Planning residential areas	7	198	3,6	5,5
2.	Technologies of land productivity restoration	7	108	2,0	3,0
3.	Remote monitoring of Land Resources	8	108	2,0	3,0
4.	Topographic and land surveying drawings	1,2	108	2,0	3,0
5.	History of land relations and land management	3	108	2,0	3,0
6.	Rational use and conservation of land	4	144	2,6	4,0
7.	Design of local roads	3	108	2,0	3,0
8.	Statistical methods in land management	3	108	2,0	3,0
Total for the cycle			***881***	***16,3***	***24,5***
Chosen by students, total			**1763**	**32,6**	**49**
Elective part, total			**3924**	**72,6**	**109**
Practical training			**792**	**14,6**	**22,0**
Degree examination			**72**	**1,3**	**2,0**
Total, according to the field of study			**8640**	**160**	**240**

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

History of Ukraine – the main content of the proposed course aims at studying and understanding the history of Ukraine in modern theoretical and methodological positions. The main objective of the course is to familiarize students with different conceptual views on the historical past of the Ukrainian state and society, their systematization.

Ukrainian language (for professional purposes) aims on structural levels of the science of language. It reviews the concept of document: details of document classification, the requirements for registration of pages, blank and form, regulatory documents, reference and information documents, documents of personnel and contractual issues.

The history of Ukrainian culture – the goal of the course is to deepen students' knowledge of history and theory of Ukrainian culture, exploring key issues of historical and cultural process in Ukraine in the global and European context.

Philosophy – the course is mastering the main challenges and achievements of philosophy from ancient times to the present and the formation of ideological orientations of students at logical-rational and reflexive levels, to familiarize students with the problems and achievements of philosophical thought from ancient times to the present, the formation of a person able to withstand a variety of external influences, such as manipulation. The course focuses on the formation of intelligent, independent, responsible, thinking person that meets the needs of today.

Foreign Language. The aim of the course is shaping students' foreign language communicative competence and exercise in learning education and development of the individual. The objective of this discipline is the acquisition of language students, cultural knowledge and formation of the language skills of speaking, reading, writing and listening in foreign language.

1.2. Cycle of natural science (fundamental) training

Higher mathematics. As a fundamental mathematical discipline, it learns the basics of mathematical analysis, linear algebra and linear programming. It contains mathematical tools for a thorough study courses: Mathematical Statistics, Risk Theory, Econometrics and Macroeconomics; it reviews integral calculus, theory of numbers. It is aimed at mastering basic mathematical techniques necessary to study biology, ecology, chemistry and physics, as well as special courses in subject areas.

Physics. The aim of the course is to show students a scientific view of the physical processes in the world, in the theoretical foundations of classical mechanics and molecular physics is based. Main methods of experimental study of the characteristics of mechanical motion, the theoretical basis of molecular physics are reviewed.

Computer science and programming. Discipline provides the theoretical knowledge and skills in using computer technologies by future surveyors in their practice. The structure of computers and principles of computer capabilities of operating systems, hardware, software, computers, Internet basics, HTML and create Web-pages, and basic techniques of office software package MS Office are reviewed.

Fundamentals of Ecology. The course introduces students to the main sections of modern ecological science: fundamental ecology, and environmental socioecology. Probable study biotic relationships between individual organisms and their populations, their interaction with the environment are shown. We consider the theory of the biosphere and ecosystems, problems and sources of energy flows in ecosystems, the problem of interaction between man and the environment, environmental ethics.

Life Activities Safety. Emergencies in peacetime and wartime, and ways of life in these conditions, Disaster, health protection rights.

Metrology and Standardization. The purpose of discipline is to teach basic principles of metrology, standardization, certification, and especially their practical use in environmental activities addressing environmental problems. Systematic meaningful relationship metrology, standardization and certification features of the functioning of these sciences in the field of application, the role and tasks of each of them to ensure the preservation of the environment and quality of life for mankind.

Geology and geomorphology. The discipline is a basic discipline that forms a comprehensive understanding of the peculiarities of the genesis, evolution and current state of geological environment within which there are individual organisms and populations. Course Objective: to form an idea of the geological features of the Earth's environment, the laws of its development, dynamics and stability in relation to human impact.

Electronic surveying instruments. The purpose of teaching “Electronic surveying instruments” is to obtain basic knowledge of complex physical phenomena and processes that underlie the operation of geodetic electronic devices and computers. The aim of the course is to develop the student theoretical and practical training for working with electronic devices that are used to determine the coordinates and heights of points the earth’s surface, as well as other engineering surveying and cadastral works.

Mathematical methods and models. Economic-mathematical modeling techniques in land is a special discipline in the training of engineers, surveyors, which aims to explore the theoretical principles and practical skills processing large volumes of information and adoption of science-based land management decisions on the use of economic-mathematical modeling methods and tools electronic computers. Students acquire the skills of self-modeling of economic processes related to the organization of rational land use in the development schemes and land management projects, and learn specialized software.

Occupational Health. The discipline studying methods of safety management, economic incentive measures to create safe working conditions, methods of investigating accidents, occupational diseases and accidents, the importance of hygiene, industrial hygiene, technical safety, including fire safety to save the lives and health of workers in the labor requirements for the safety of technical equipment and technological processes, measures and means to prevent action on a person dangerous and harmful factors.

1.3. Cycle of professional and practical training

Topography. Objectives of the course is to build knowledge about the history of the formation and discipline contribute outstanding domestic and foreign scientists in the development of geodetic science and practice, the current understanding of the shape and size of the Earth, the coordinate system used in geodesy, modern surveying instruments for measuring angles, lengths of lines, calibration, organizing and conducting topographic survey of objectives for land use, land-cadastral use, data preparation techniques for the agricultural purposes, methods for making and fixing areas of design points and lines.

Geodesy. Objectives of the course is to build knowledge about and outstanding contribution to domestic and foreign scientists in the development of geodetic science and practice, the current understanding of the shape and size of the Earth, the coordinate system used in geodesy, modern surveying instruments for measuring angles, conducting topographic surveys during land management, execution of cadastral and other works, techniques for data preparation makes the nature of objects agricultural purposes, methods for making and fixing areas of design points and lines.

Photogrammetry and Remote Sensing. Examines the nature and methods of remote sensing, the theoretical and practical issues related to the use of aerial and satellite imagery, as well as the essence of photogrammetric processes. In the study subjects, students receive the necessary knowledge of analytical and digital photogrammetry, image processing technology study in order to obtain certain products (cards, directories coordinates, etc.).

Satellite Geodesy and spherical astronomy. It examines current methods for solving scientific and practical problems of geodesy, based on the use of data of space geodesy, astronomy, the theory of the gravitational field and satellite observations in solving the land. We study methods for processing photographic and radar surveys received satellites. We consider the issue using different coordinate systems needed to meet the challenges of satellite geodesy. Attention is paid to the study of satellite motion in the gravitational field of the Earth, including consideration of the impact changes in the physical characteristics of the planets and the outer (space) factors. We study the theory and practice of solving geometric and dynamic problems of satellite geodesy.

Higher Geodesy. Discipline "Higher Geodesy" examines modern methods for solving basic problems of geodesy based on the joint use of data of higher geodesy, astronomy, gravimetry and satellite geodesy. It consists of two main sections: "Spheroid geodesy" and "Physical Geodesy". The first deals with the solution of geometric problems on the surface of the ellipsoid, the theory of separate images of the surface of an ellipsoid on a plane and solve problems associated with the use of flat rectangular coordinates to geodetic works. The second examines questions that refer to the study of the figure of the Earth, its gravitational field and processing astronomical and geodetic networks.

GIS and databases consider the basic theory of GIS and database professionals surveyors. Discipline gives a basic theory of databases, the use of modern GIS and relational database systems in land, acquiring skills automated, storage, display, analysis, modeling spatially coordinated the design and content of databases, GIS for land management, particularly for the introduction and use of data from the state land cadastre.

Mathematical processing of geodetic measurements. The main purpose of discipline is to provide students with the necessary knowledge and skills needed to perform geodetic measurements and calculations, including during surveying work. Study subjects gives a theoretical knowledge and practical skills in the processing and resolution of surveying tasks to handle as a single value, and for the joint processing of many interconnected geodetic values.

Investment analysis. Course examines a set of methods and techniques that help to develop an effective investment project and determine the optimal parameters for its implementation in the face of uncertainty and limited financial resources, to generate an optimal investment portfolio

State Land Cadastre. In the study subjects, students receive the necessary knowledge and skills in the principles of the State Land Cadastre of ensuring the completeness and reliability of information on all the plots in a single geographic information system data. Particular attention is paid to sources of inventory information on land resources. Technical and methodological aspects of the cadastral information for the purposes of land management, land management statistics, land management of land law, support of tax and investment policy, land market development and justification of the size of the land are considered.

Cartography. This discipline reveals the nature and properties of maps as models of the environment, their mathematical basis, methods of imaging, the issue of generalization, conclusion of maps and atlases, their classification, cartographic method of research, technology mapping. It generates students' ability to create works of various cartographic scale, scope and purpose of their use in teaching, research and practice.

Land Law. Purpose of the discipline: the formation of future bachelors mastering a set of knowledge in the legal regulation of land relations knowledge and ability to analyze legal acts that regulate the possession, use and disposal of land by individuals and legal entities. The task of the study: to be able to apply the acquired theoretical knowledge in the field of land relations in the performance of production activities, practical tasks, specific professional situations in the possession, use and disposal of land.

Financial and economic activity. The aim of the course is to explore students, future engineers, surveyors, basis of financial, economic and business enterprises and use this knowledge to solve practical problems, the formation of the students of modern economic thinking, thorough knowledge of management, planning, organization of production in modern enterprises in a market economy. Students need to know the components of the economic and financial mechanism of enterprises, regulatory and legal framework for financial and economic activity indicators that characterize the financial activities of the entity, have knowledge regarding the classification of business entities for certain signs to know the basics of planning, accounting, reporting, pricing and financing of the company, business land management organizations.

Organization and management of production study the principles of organization and management of production, production process, its organization and structure, types of production, the structure and characteristics of assets, pricing mechanisms, ownership and their impact on the organization and functioning of the enterprise; mechanisms and principles of Stir production and supply logistical resources, principles of design financial plans of enterprises, accounting principles at an enterprise, planning methods and analysis of economic activity, legal regulation of business; principles of the tax system, the financial relationships between enterprise budget, allocate business processes, know the principles developed calculation of transfer prices, organize budgeting.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.2.1. Cycle of natural science (fundamental) training

Land reclamation purpose - to familiarize students with the basic types of reclamation, the current state of agricultural reclamation, reclamation work on the influence of natural factors of soil formation, positive and negative effects of reclamation and environmental problems on land reclamation.

Soil Science and the basics of Agrochemistry reviews the science of soils, their formation, structure, properties, patterns of distribution, formation and development of the main properties - fertility, the most rational of use of soil. It examines the soil as a natural body, as a means of production, the subject of human labor and its product.

Agriculture. Explores the theoretical and practical problems most rational use of arable land, agricultural landscapes, how to develop physical, chemical, biological and mechanical methods and techniques to improve soil fertility, crop yields and stability of agroecosystems.

Crop science deals with the study of new varieties and hybrids of cultivated crops and wild plant species to the action of biotic, abiotic and anthropogenic factors of the environment, develops cultivation technology for yields with consistently high quality based on intensification, energy saving and environmental safety.

2.1.2. Cycle of professional and practical training

Land Cadastre. Purpose of the discipline is mastering the theoretical foundations of the land cadastre, composition and content of its components, the procedures for obtaining the necessary information and documents about the legal status of the land, their distribution by category and among land owners and land users, the organization of accounting quantity and quality of land , establishing comparative national economic value of land, the introduction of procedures for cadastral information during the project work, special surveys, study the legal, methodological, technical, organizational and practical aspects of the State Land Cadastre.

Land Management. This discipline plays a leading role in training bachelor students on specialty "Geodesy Cartography and Land Management." Methodology and methods of rational use and protection of land, formation of different types of land use, delineation of political subdivisions, planning areas. We consider the territorial organization of agricultural and industrial production in the regions and ownership of land are studied. The course covers the overview of the requirements for land use at the national, regional and local levels.

Geodetic works in land management. Students learn the features of the existing geodetic materials that include significant examination of a particular area; work with involving geodetic surveying marks, topographical survey of existing underground utilities, and processing of the results.

Fundamentals of Land Management. Land Management is a special discipline in the training of engineers and surveyors aims to know the nature and patterns of land management, research methods and management mechanisms. Each mode of social production, the level of productive forces and relations of production correspond to a definite system of land management, due to the dominant form of ownership of land and other means of production, as well as the inherent forms of land use. To properly understand the nature and basic ways of land management, to justify its maintenance and reveal patterns of changes in the specific conditions of the land system, it is necessary to trace the historical relationship management with other phenomena and specific historical experience.

Automated Cadastral Systems. The discipline studying the basics of automated cadastral systems associated with information support of the State Land Cadastre (SLC). The elements SLC automated through the use of GIS technology.

2.2. Disciplines chosen by students

2.2.1. Cycle of humanitarian, social and economic training

Psychology - the course is aimed at making future specialist could feel confident, stepping into a profession. Knowledge about the features, principles and patterns of training and education of individual psychological characteristics of its formation and development of individual psychological characteristics that lead to specific behavior of the individual, its activities and communication, help to understand the deeper motives of human actions, to regulate their relations with these and other problems are the focus of the course.

Economics. The object of discipline is to study the economic laws of social production, the rationale for the choice of entities optimal use of scarce resources in order to most fully meet the growing needs of people. The aim of the course is to develop knowledge systems of economic relations in society, issues of efficient use of limited resources, the operation of the main components of the economic system, the development of students' economic thinking.

Law. the discipline develops an integrated system of knowledge and skills of Ukrainian law, formed on the basis of modern achievements in legal science, with knowledge of citizenship, the general theory of society and the state of law, with the natural essence of law, they forms of correlation civil society and the state of fundamental rights and freedoms of people and citizens of Ukraine of direct and representative democracy, forms of state and territorial structure of Ukraine, bodies of state and local governments, as well as mastering the legal basis of such branches of law as well as civil , employment, family law and other branch of law.

Sociology. The course is aimed at learning students the most important questions of social science. Sociology enables students to understand the nature and characteristics of social laws and regularities, which operate social groups, communities, society, and the ability to analyze problems that the modern generation of social practice, the ability to independently prepare and conduct a case study at a small social group.

Politology. The discipline presents the main issues of political science, the study of which enables future young professionals in the field of philology acquire political knowledge necessary for the attainment of political science culture. In the process of studying this discipline students learn the following concepts: political science as the study

of patterns of development and functioning of political society, the mechanism of political power, control political processes, milestones of world and national political thought, politics and political relations, political power, the political process, political system of society, political system, political parties, public organizations and movements in the social and political life of society, identity and politics, political culture, global political process.

2.2.2. Cycle of natural science (fundamental) training

Agroforestry amelioration. The discipline aims on study of steppe massive afforestation, creation of shelter forest belts, combating soil erosion, consolidation and development of the sands, mountain afforestation.

Inventory of settlements. The aim of the course is to explore theoretical issues of inventory settlements and practical application of these issues in the conduct of basic and current land records in order to explore the land fund all towns - villages, towns, cities, reporting the presence and distribution of land settlement, located owned and providing for the use, preparation of a report on the availability and distribution of buildings (structures) settlement by the number of floors, wall material, technical equipment, for reasons of unsuitability for use; report on street road network location, network engineering settlement, carrying monetary value of the land settlements: functional zoning settlements, compiling balance of land settlements.

Infrastructure Engineering of Territories. The discipline involves the examination of placement within certain territories set of objects and structures, utilities and components contour reclamation of territory and internal organization of agricultural enterprises. The principles of rational distribution of elements of artificial arrangement, taking into account the economic needs. Students learn to develop design solutions aimed at the rational use and protection of land, increasing the efficiency and productivity of land resources.

Digital plans and maps cover the basics of digital mapping and the possibility of using GIS in digital maps. The compilation of digital maps and plans using ArcGIS 9.x is taught.

2.2.2. Cycle of professional and practical training

Planning residential areas gives knowledge about the basic objectives and planning of routes and reconstruction of villages, skills in drafting and planning of residential and industrial development zones, to use normative and methodological literature on the development of urban planning and apply their knowledge in drafting land use to set or change the boundaries of the settlement, the monetary evaluation of land settlements.

Technologies of land productivity restoration. Purpose of the discipline - the formation of skills to analyze independently the quality of soil, to predict its changes under the influence of economic activity, to develop measures for optimizing the main parameters of soil fertility, the general principles of self-mastery and regain productivity of land in various natural and agricultural areas.

Remote monitoring of land resources includes the study of the preprocessing and thematic processing of remote sensing (RS), the possibility of using remote sensing data for monitoring and management of land resources.

Topographic and land surveying drawings study the linear and dashed graphics elements and techniques of drawing, fonts for land management projects, plans and maps, symbols (codes) for graphic design topographic, cadastral surveying and materials, graphic design materials and land cadastre, GIS technology of maps and plans; technology design projects land management plans and land use map in class graphics editors.

The history of land relations and land management. The discipline involves the study of the formation of land relations - from primitive society to modern socio-historical formations. Students learn the features of land relations and land use in the ancient world, in feudal times. The features of the formation of land market relations. Details the features of land surveying work performed at the time of the Russian Empire, the Soviet Union and the independence of Ukraine.

Rational use and conservation of land. Purpose of the discipline - the formation of skills independently analyze the state of land use, evaluate options for optimization, predict the development of degradation processes, develop measures to prevent, capture the general principles of management of land resources on specific soil and climatic conditions.

Design of local roads. Aim of the discipline - to give students knowledge that will allow them to find optimal solutions to problems related to the rational use of land resources in the planning and design of road network to meet the requirements of an effective area of farms, efficient implementation of production processes and land use, perform economic assessment placement of road network into account logistics movement and make technical design of local roads of lower categories.

Statistical methods in land management - the fundamentals of using mathematical and statistical methods of land management and cadastre data using computer technology are reviewed

Bachelor
in specialty "JURISPRUDENCE"
field of knowledge "Law"

Mode of study, licensed volume:	
– full-time	75 persons
– distance	75 persons
Term of apprenticeship	4 years
Credits	240 ECTS
Language of teaching	Ukrainian
Qualification of graduates	Bachelor of Laws

The concept of training

Training of the qualified specialists in the field of law, who work for the establishment of supremacy of law in society and development of legal consciousness and legal culture of citizens. Education of the professional lawyer who can decide the issues of legal support of various spheres of public activities with a focus on agrarian, land and ecological relationship.

Practical training

During the training students fix and deepen the theoretical knowledge received in the process of studying of the fundamental and professional legal educational subjects and get skills of practical law enforcement. During the practical and production training students become participants of practical activities on the application of legal norms, observe and analyze various aspects of the lawyers-experts activity, learn how to take actions related to protection of rights and legal interests of physical and legal entities.

Academic rights of Bachelors - they can continue their education on the programs of preparation of masters by profession, the symptoms of which are put in the curricula of bachelor's programmes, beginning with the second or third courses:

7.03040101 – "Jurisprudence"

8.03040101 – "Jurisprudence"

or degree in the field of knowledge 1801 "Specific categories":

8.18010010 – "Quality, standardization and certification"

8.18010018– "Administrative management"

8.18010020 – "Direction of the education institution"

8.18010021 – "High school pedagogy"

Spheres of Bachelors employment

The associate lawyers prepared within the programme have the possibility to work by profession in the authorities of public administration of Ukraine (public and local authorities), as well as at the enterprises, institutions and organizations as all-legal area of focus, and those that operate in different spheres of public life.

Bachelors Program and Curriculum in Specialty "Jurisprudence"

N	The name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training*					
1	Ukrainian language (according to the professional course)	1	108	2,0	3,0
2	History of Ukraine	1	108	2,0	3,0
3	History of Ukrainian culture	1	72	1,3	2,0
4	Foreign language	1-4	180	3,3	5,0
5	Philosophy	2-3	108	2,0	3,0
6	Physical education **	1-4	216	4,0	6,0
Total for the cycle			***576***	***10,6***	***16,0***
1.2. Cycle of natural science (fundamental) training*					
1	Logic	2	90	1,6	2,5
2	Legal medical ethics	2	108	2,0	3,0
3	Theory of state and law	1,2	216	4,0	6,0
4	History of state and law of Ukraine	1,2	216	4,0	6,0
5	History of state and law of foreign countries	1,2	216	4,0	6,0
6	International public law	6	90	1,6	2,5
7	National law of foreign countries	5	108	2,0	3,0
8	Basics of information and computer science	1	90	1,6	2,5
9	Safety Of Living	4	54	1,0	1,5
10	History of doctrines about state and law	3	90	1,6	2,5
Total for the cycle			***1278***	***23,6***	***35,5***
1.3. Cycle of professional and practical training*					
1	Judicial and law enforcement authorities of Ukraine	1	108	2,0	3,0
2	Constitutional law of Ukraine	3	144	2,6	4,0
3	Administrative law of Ukraine	4	144	2,6	4,0
4	Financial law of Ukraine	7	126	2,4	3,5
5	Civil and family law of Ukraine	2,3,4,5	432	8,0	12,0
6	Criminal law	3,4,5	432	8,0	12,0
7	Environmental law	6	126	2,4	3,5
8	Employment law	5,6	216	4,0	6,0
9	Criminal procedure	4,5	360	6,6	10,0
10	Civil procedure	6,7	216	4,0	6,0
11	Science of criminal law	7,8	216	4,0	6,0
Total for the cycle			**2520**	**46,6**	**70,0**
Regulatory part, total			**4374**	**89**	**133,5**
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of natural science (fundamental) training*					
1	Basics of Roman Law	2	90	1,6	2,5
2	Latin	1	90	1,6	2,5
3	International and legal standards of nuclear safety	8	72	1,3	2,0
4	European law	7	144	2,6	4,0
5	Intellectual property law	6	72	1,3	2,0
6	Basics of scientific and legal studies	3	72	1,3	2,0
7	Practice of European Court on Human Rights	6	108	2,0	3,0
8	International defence of human rights	4	108	2,0	3,0
9	International and legal standards of human rights	3	90	1,6	2,5
10	Comparative law	8	108	2,0	3,0
2.1.2. Cycle of professional and practical training*					
1	Land law	6,7	198	3,7	5,5

2	Agrarian law	7,8	180	3,3	5,0
3	Economic law	5,6	144	2,6	4,0
4	Economic procedure	6,7	144	2,6	4,0
5	Banking law	8	72	1,3	2,0
6	Company law	8	72	1,3	2,0
Chosen by university, total			***1764***	***32,7***	***49,0***
2.2. Disciplines chosen by students					
2.2.1. Cycle of humanitarian, social and economic training *					
1	Religion studies	4	54	1,0	1,5
2	Basics of the economic theory	2	162	3,0	4,5
3	Politology	1	108	2,0	3,0
4	Sociology	4	54	1,0	1,5
5	Basics of psychology and pedagogy	3	54	1,0	1,5
2.2.2. Cycle of natural science (fundamental) training*					
1	Private international law	8	108	2,0	3,0
2	Computer-based legal systems	2,3	162	3,0	4,5
3	Institutional law of EU	6	108	2,0	3,0
4	Legal psychology	5	72	1,3	2,0
5	The history of political and legal thought in Ukraine	4	108	2,0	3,0
6	International data protection law	8	108	2,0	3,0
7	Ukrainian studies	2	72	1,3	2,0
2.2.3. Cycle of professional and practical training*					
1	Notary in Ukraine	5	72	1,3	2,0
2	Criminology	8	90	1,6	2,5
3	Practice of law in Ukraine	5	72	1,3	2,0
4	Energy law	8	72	1,3	2,0
5	Administrative procedure	7	108	2,0	3,0
Chosen by students, total			**1584**	**21,3**	**32,0**
Elective part, total			**2916**	**54,0**	**81,0**
Practical training			**882**	**16,4**	**24,5**
Degree examination			**36**	**0,6**	**1,0**
Total, according to the field of study			**8640**	**160**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.
**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Annotations of the educational subjects “Ukrainian language (according to the professional course)”, “History of Ukraine”, “History of Ukrainian culture”, “Foreign language”, “Philosophy”, “Physical Education” see section 2.1.

1.2. Cycle of natural science (fundamental) training

Logic. The study of the science of logic provides the familiarization of the students with the logical theory of thinking and mastering the skills of logical analysis received in the process of study of the politological knowledge and interpretation of the formalized language of the science of logic in the sphere of politology; identification of logic errors in reasoning with political content; development of political knowledge; proving of the political knowledge on the truth or refutation on the false.

Legal medical ethics. Legal medical ethics is a compulsory educational subject of the curriculum of all legal education institutions as its main provisions are basic for clarification of the essence of legal practice and legal activities. Educational subject aims to familiarize students with specific of professional activity of the lawyer, to disclose the requirements of the legal medical ethics, applicable to the specialist, to show the ways of improvement and development of his or her personality. Special attention is paid to the moral problems that arise in law enforcement activity during the administration of justice and the practice of law, as well as the norms-requirements of the lawyers' behavior in different spheres of community activities.

Theory of state and law. Theory of state and law is the social science of the theoretical and legal nature and the fundamental professional educational subject. It studies the theoretical nature of function of such social phenomena as state and law and promotes the assimilation by students of the system of general and theoretical modern knowledge on the general regularities of origin, development and function of state and law. The main task of this educational subject is to clarify the place of state and law in modern society; learning of the conceptual and categorical apparatus of the theory of state and law; formation, deepening and systematization of knowledge about basic concepts of the theory of state and law; development of a proper scientific understanding and holistic view on state and legal reality.

History of state and law of Ukraine. History of state and law of Ukraine is a compulsory educational subject in all higher education institutions and faculties of our country. Study of historical and legal heritage of the past generations gives an opportunity to understand more deeply the modern processes of state and legal construction, understand general regularities, main directions and prospects of development of state and legal institutions in the future. History of state and law of Ukraine aims to familiarize students with state and legal development of Ukrainian nation from ancient times to the present, including the historical types and forms of state and law, political institutions and legal institutions in their historical development, it considers also the role of the state and law in society.

History of state and law of foreign countries. History of state and law of foreign countries is a social science of the historical and legal nature. It studies the origin, development and function of such social phenomena as state and law of different countries of the world. History of state and law of foreign countries is, first of all, the legal science, and, therefore, belongs to the main courses for receiving the higher legal education. The curriculum includes only those states which have left a big mark in the history of mankind, whose experience was widely used and is used by mankind until now. History of state and law of foreign countries aims to provide the opportunity to students of all forms of mode of study to understand and learn the doctrine about state and law in general. However, it should be taken into account that this educational subject has not only theoretical, but also practical value. After all, it helps to understand modern social and legal phenomena and institutions.

International public law. International law plays an important role in the regulation of the relations between states, helps to maintain their stability. The science of international public law develops the ability to assess and reasonably predict the development of international policy and relations. Study of this science allows to predict changes in the system of international relations, to simulate the behavior of subjects of international law, and to predict the effects of their proposed solutions. Study of this system of law and educational subject offers a future lawyer the opportunity to understand the processes of implementation and regulation of international cooperation. Course has theoretical and practical and legal value.

National law of foreign countries. The task of the education subject is to develop students' theoretical and practical knowledge on the theory and practice of the educational subject National law of foreign countries, to learn the legislative base and the ability to put it into practice. The theoretical part aims to familiarize with the concept and essence of this educational subject, to familiarize with the laws, legal norms of different countries, domestic constitutional law of each country, constitutional and legal status of a person and citizen, forms of government, elections and referenda, system of higher authorities. The practical part aims to familiarize with depth study of the analysis of modern system of normative and legal acts of foreign countries, ability to put them into practice, to consider a certain range of public relations regulated by the norms of law of different countries.

Basics of information and computer science. Study of this educational subject gives the opportunity of formation of qualified associate lawyers, capable to orientate in different and volume information flows of modern times. The task of the education subject is to provide students with the basics of information and computer science and to fix this knowledge, as well as the ability to apply them when working with personal computer (PC) and modern computer systems of data processing.

Safety of living. The problem of human protection from dangers occurred simultaneously with the appearance of humankind on the Earth. Throughout the history of civilization every single person cared only about his or her own safety and the safety of its existence. The main aim of the course is to provide future specialists with the knowledge of basics of Safety of living, which allow them to improve the conditions of life, work, ensure prevention of industrial injuries and occupational diseases, prevention of emergency situations of technogenic and natural characters. Develop skills in the sphere of formation of modern model of control of the conditions, occupational health and safety at the national, regional and industrial levels.

History of doctrines about state and law. “History of doctrines about state and law” is a system of knowledge that helps students to form a systemic approach to understanding the nature and content of the notions of “law”, “right”, “state”. Today, the value of the history of doctrines about state and law as a school for alternative thinking dramatically increases, that allows to compare different theories, directions of political and legal thought, taken into account the centuries-old discussion on these issues. This educational subject aims to equip students with knowledge about essence of the state and law, basics of the constitutional system of Ukraine, civil, employment, family and criminal law; to develop skills of lawful behaviour, to raise the confidence in the necessity of strict observance of the principle of the supremacy of law. It sets such tasks as to learn the system of state and legal concepts and categories of the theory of state and law, public and law and private and law areas of law.

1.3. Cycle of professional and practical training

Judicial and law enforcement authorities of Ukraine. The educational subject “Judicial and law enforcement authorities of Ukraine” gives general background information about public and private authorities engaged in law enforcement activities. In essence the educational subject is basic, as it gives knowledge, without which it is impossible to learn the material of the following legal educational subjects. Learning of this knowledge allows to understand more deeply the specifics of the activity of law enforcement authorities during the study of civil, criminal, economic and administrative procedures.

Constitutional law of Ukraine. Constitutional law of Ukraine is the leading branch and science of national law system in Ukraine. As a branch of the national law, it establishes and regulates, and as a science, it studies the fundamental social relations regarding the political-territorial organization of the country, its operation, the socio-

economic system. This means that it formulates the scientific bases of establishment of Ukraine as a state, without which the latter cannot be optimally predictable.

Administrative law of Ukraine. Educational subject, which includes the mastery of specific tools of administrative law science, the study of the essence, forms and methods of state government, the Executive power system and its functions, problems of administrative enforcement in the state administration and the responsibility, the state economic management, the management of social and cultural development, administrative-political activity and cross-sector state governance.

Financial law of Ukraine. Today, social, legal and political reforms are being implemented in Ukraine. In terms of the radical changes in the life of our country, the content of the financial relations are changing significantly, their legal regulation is improving, and thus the role of the financial law significantly increases. The objective of this course is formation of knowledge about the legal regulation of financial activity of the state and basic skills of application of financial legislation.

Civil and family law of Ukraine. Civil and family relations are the wide layer of public relations, which every human is constantly facing throughout life from birth every day. Participation in these relations is implemented through the ability to have and exercise civil and family rights and responsibilities. However, knowledge of own rights and responsibilities is not enough. We should know not only how to exercise them in everyday life, but also how to protect them against invasion. While studying this course the student acquires knowledge not only of the civil and family legislation system , but also the relevant theoretical provisions, without which it is impossible to thoroughly understand and interpret the civil, family and legal categories.

Criminal law. The purpose of the criminal law studying is mastering by the students of knowledge of criminal law objectives, functions and principles; knowledge of the general conceptual framework of criminal law of Ukraine; ability to systematize and locate criminal legal norms; skills of the proper application of the common criminal law institutions in solving practical tasks; skills of the identification of crime signs in the committed act, the delimitation of crimes from other infractions; the ability to define the grounds and forms of criminal responsibility and the grounds of application of other measures of criminal-legal influence; the ability to perform a search and critical analysis of the materials of law-enforcement activities in solving specific practical problems; the ability to understanding the general directions of the criminal policy in Ukraine.

Environmental law. Environmental law is aimed at creating most favorable conditions for life, work and recreation of citizens. This is life saving and protecting branch of law, its importance for human life and activity and for the whole society is hard to overestimate. The highest goal of the social policy of our state is to take care of the life and health of a person - this sector has the potential to implement it. Environmental relations are established between society and nature, between people and the environment. The objects of ecological relations are the natural wealth of the land, its minerals, waters, forests, air, wildlife, etc.

Employment law. Employment law is one of the leading braches that constitute the law system of Ukraine, as it regulates one of the most important spheres of social relations — labour relations between employees and employers.

Criminal procedure. As an educational subject, criminal procedure is based on the science of criminal procedural law and practice of its application by the courts, prosecutors, investigators, bodies of inquiry, lawyers. The aim of teaching the course «Criminal criminal procedure of Ukraine» is the disclosure of its importance for the protection of rights and legitimate interests of physical and legal persons during criminal proceedings, for consolidation of legality and law order, protection of interests of society and state.

Civil procedure. Discipline «Civil procedure» is based on the system and the provisions of the Civil Procedure Code of Ukraine. This discipline studies the general provisions of the legal regulation of the procedure for consideration and disposition of civil cases, institutes of civil procedural law, that constitute its system, including civil legal procedural jural relationship, evidence and proof, the development of civil procedure as to stages and procedures, the procedural issues of execution of judicial awards.

Science of criminal low. Transition of Ukraine to the new socio-economic structure and process of the development of the operative democratic state and a truly civil society, as well as the necessity of building of the effective modern law enforcement system needs active usage of rich armory of science against criminality. The science of criminal low is important discipline in the system of scientific knowledge, it is enhancing the enforcement activities. The discipline «Science of criminal low » plays the special role in the long process of training of high profile, modern lawyer.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.2.1. Cycle of natural science (fundamental) training

Basics of Roman law. The education subject “the Basics of Roman law” is a compulsory subject in the curriculum of all higher educational institutions. The historical significance of Roman law for Ukraine is based on the fact that for a long time it in its classic and Greco - Roman (Byzantine) variants had influence on the the formation and development of the Ukrainian law and continues to influence the formation of the concept of law in Ukraine today. The goal of the course is to acquaint students with the legal culture of Ancient Rome, with the basic institutions of the Roman public and private law, and also show the influence of Roman private law on the development of modern global civil law and civil law of the Ukraine in particular.

Latin. Study of Latin remains an essential part of the process of formation of specialist with higher education. A modern specialist must possess the skills of translation from Latin as the language of public educational function, this fulfills the role of an auxiliary subject as to qualification of specialist – legislator (representing a written sources of Roman law and international legislative language terminology). The aim of Latin course in the legal higher educational institutions is the mastery of the elementary grammar basics of Latin, to develop the ability to read and translate original legal text (medium difficulty), the accumulation of lexical stock with the help of dictionary , the ability to actually use legal terminology.

International and legal standards of nuclear safety. The usage of the nuclear energy for peaceful purposes opens extremely wide opportunities to improve the welfare of mankind. However, increasing of the number of scientific and industrial nuclear reactors, the intensification of nuclear materials trade and transportation, utilization of nuclear waste contain a potential risk of radioactive contamination of people and the environment. At the same time due to its physical and chemical properties, the radioactive contamination is a danger to the countries, which may be located far from the borders of the country, where the nuclear incident occurred. These circumstances require joint efforts of the international community in ensuring of the safe development of atomic energy and to prevent negative consequences of uses of the atom for peaceful purposes .

European law. Ukraine, which is located in the centre of European continent, should take its proper place and contribute to new perspectives of development of European and transatlantic relations, basing on unconditional respect for the norms of a democratic civil society, supremacy of law, development of market relations on the

principles of free competition. European law is a branched complex international and supranational legal norms relating to different branches of law and are in a state of rapid development.

Intellectual property law. Intellectual property issues in the modern world took a prominent place and became not just a legal or commercial, but because of the general intellectualization of modern economy, these problems, the solution of which requires complex strategic approaches, are becoming more political, that is why the role of the country in the protection of the owner rights in the conditions of deepening market reforms increases.

Basics of scientific and legal studies. Scientific activity in the higher educational institutions is an integral part of the educational process and is carried out with the purpose of integration of scientific, educational and production activity in the system of higher education. The law of Ukraine «About higher education» defines the main tasks of scientific activity in higher educational institutions, which include: systematic unity of the education content and the scientific activities program; establishment of the higher education standards, involving leading scientists; employees of universities and other scientific institutions and organizations to the educational process; organization of scientific, practical, methodological seminars, conferences, Olympiads, competitions, scientific and research, term paper, diploma and other works.

Practice of European Court on Human Rights. The practice of the European court shows that the number of violations of human rights in Ukraine is only a little over 1% of the total number of human rights violations, recorded by European court in other countries. For example, from 8.5 thousand decisions of European court, only 120 in European court found a violation of rights by Ukraine. Very rarely, cases against Ukraine were satisfied by the court in full, and often not in the part of the claim, which appeared as a defining. Thus, a certain practice was formed in Ukraine as to appeals to the European court of human rights and passing judgment, which requires its study and analysis for a more effective recourse to the Court.

International defence of human rights. The course is aimed at confirmation of the right as the art of goodness and justice through the promotion of a positive attitude towards the protection and observation of human rights and fundamental freedoms. It provides an overview of the basic ideas, concepts, principles of human rights, which are reflected in the theoretical writings and practice of the European Court of Human Rights and it contain information about legal activities in the field of human rights, forms, ways of legal protection and human rights observation.

International and legal standards of human rights. Today, basic human rights and freedoms are the objects of not only the internal competence of the country, but also became the objects of concern of the whole international community. These fundamental rights and freedoms enshrined in a number of important international legal acts establishing universal standards of human rights and freedoms of the individual. As a whole, these acts constitute the so-called the International Bill of Human Rights. According to the international legal acts, all persons who reside in a member country, signed this Bill or country, which is subject to the jurisdiction of such country, have the opportunity to exercise the rights provided for in these acts, without limitation based on any grounds.

Comparative law. One of the major trends of modern law is intensification of integration processes, increasing of the international law influence. This encourages the active involvement of comparative law research. Comparative law as a branch of legal science has specific subject and method of scientific research: goal, objects, functions, structure, theoretical and methodological data. Its General part contains a basis of comparative law analysis of the modern law systems of the world as the main object of

study. And a Special part shows the possibility of using a comparative law method in various fields of jurisprudence and legislation.

2.1.2. Cycle of professional and practical training

Land law. Land law studies the social relations between the subjects as to the realization of property right to land, and as to the issues of ownership, usage and disposal of the land. The purpose of the land law is the regulation of the land dealing relations between the subjects. According to the land law system, there are land dealing institutions, they are primarily the property right to land, forms of land uses, land servitudes, neighbourliness, security of property right to land, responsibility for violation of land legislation, the legal regimes of the land of Ukraine in accordance with their categories etc.

Agrarian law. The study of the current agrarian legislation and legal issues arising during the formation, activity and termination of economic operator in agriculture complex, definition of the legal regime for the property of such enterprises, acquaintance with the specifics of their management; study of the relations of the reforming of property and land of non-state agricultural enterprises, ways of protection of the peasants rights in the process of reforming, the peculiarities of the legal regime of agricultural purpose lands .

Economic law. Economic law is taught to students of the third course, that is why the subject includes the study of economic law legal institutions, based on already obtained knowledge of state and law theory, constitutional, administrative, financial, civil laws and other methodological recommendations are to be used to help in acquisition of subject knowledge and to achieve the aims of the course study . The purpose of course is formation of the system of knowledge about legal regulation of economic activity, legal regulation of economy business in various specific fields of national economy.

Economic procedure. Economic procedure studies the basic concepts, institutions, principles and sources of the economic procedural law, the provisions regarding organization and functioning of the economic courts of Ukraine; peculiarities of consideration of economic disputes; teaches to use the acquired knowledge in practice and make corresponding procedural documents. The aim of the course “Economic procedure” is to form a system of theoretical knowledge and practical skills of application of the procedural law norms with the rules of substantive law during the consideration of disputes subject to the jurisdiction of the economic courts.

Banking law. Banking law of Ukraine is the independent branch of law, which includes the system of norms and principles aimed at regulation of the banking activity, organisation and functioning of the banking system of Ukraine. The course of banking law, which was designed to help students to master the banking law as a separate branch, promotes the independent acquisition of skills and the professional solving of practical problems in this sphere. The significance of the course is based on the increasing importance of the banking law in the system of legal sciences, mainly because of the transition of Ukraine to the principles of a market economy, the growth of the role of banks as financial intermediaries in the national financial and credit system.

Corporate law. Corporate law is a new institutional formation in the law system of Ukraine. The terms “corporate law”, “corporate relations” were practically not used for a long time in the domestic legal science, they occurred only in works, devoted to the study of foreign countries law. The purpose of subject “Corporate law” is to give students basic knowledge of the subject, provide training aimed at the formation of intellectual potential of highly qualified lawyers, which have basic theoretical knowledge in the field of corporate right, necessary for future activities.

2.2. Disciplines chosen by students

2.2.1. Cycle of humanitarian, social and economic training

Religion studies. Studying of the history of formation and evolution of the religious systems, nature and genesis of freethinking, modern religious situation in the world and in Ukraine, reveals the nature of religion as a social and cultural phenomenon. Religion studies significantly increase the ideological potential of the humanities. The aim of the educational subject is ideological and spiritual - moral training of students for their independent orientation in terms of free choice, knowledge of the social and cultural features of different countries and nations.

Basics of the economic theory. The main task of the course “Basics of the economic theory” is formation of deep economic knowledge of students, logic of modern economic thinking and economic culture, adequate conditions of transition of the country to market relations, teaching of students the basic methods of analysis of economic processes, and the ability to take informed decisions about economic problems.

Politology. Formation of system of knowledge on questions of modern political system of the society, political consciousness and democratic political culture, necessary skills of political activities; study of the essence, theory and methodology of politology as a science; development of skills of understanding of political relations and processes; mastering of skills of practical application of theoretical, applied and instrumental components of political knowledge; analysis of international political life, geopolitical situation and political processes in Ukraine, its location, status and responsibility in the modern political world.

Sociology. Worldwide there are significant changes in the sphere of work, information and government. Education becomes an independent factor of deep social and economic changes. Highly educated people are not only carriers of the best samples of national culture, but also a great social potential, without which society becomes uncompetitive. Now, students should be not only professionally trained in the chosen area, but also socially competent people, who know the laws of social organization, development of social changes, know the basics of competent communication.

Basics of psychology and pedagogy. Knowledge about the features, principles and regularities of training and education of the personality, psychological features of its formation and development, about individual and psychological properties, which determine the specificity of a person's behaviour, its activity and communication, help understand more deeply the motives of human actions, to regulate relationship with them - these and other problems are major focus of interest of the course.

2.2.2. Cycle of natural science (fundamental) training

Private international law. Private international law plays an important role in formation of the future lawyer. It serves to form the civil vision of the student-lawyer of private international law, of concept, methods of regulation of property relations with a foreign element, to give the most complete knowledge about the regulation of the in private law nature, as well as about the unity and contradictions existing in the world of legal systems.

Computer-based legal systems. Today, the volume of regulatory information, that is constantly changing, is so big that for quick access to it, its systematization, as well as timely and correct use, the use of specialized software and hardware becomes more necessary. It is this purpose, the information computer-based legal systems, widely-spread all over the world, serve to. So, the ability to use such systems becomes a necessary condition of successful work of the specialists of any sphere of activity.

Institutional law of the EU. Creation of the European Union with its special system of legal norms was due to the development of the economic, political and legal integration on the European continent. We consider the competence of the EU as a form of institutionalization of the integration processes in Europe and make the legal description of the ratio of the exclusive competence of the EU and competence of the Member States, features of the legal nature of the EU, due to its supranational character, which affects the structure and activities of the institutional mechanism of this interstate integration association; characterize the basic principles of activities of the executive authorities of the EU: European Commission, which affects the development of integration processes within the EU; the legal nature and the order of adoption by the EU Council and the European Commission of the legal acts - regulations, directives, decisions.

Legal psychology. The main task of the legal psychology is to study the psychological regularities of influence of law and law enforcement activities on individuals, groups, collectives, and also to develop scientific recommendations in order to improve the effectiveness of law enforcement activities, strict adherence to the law, successful solution of problems of justice and rehabilitation persons who have committed crimes.

History of political and legal thought in Ukraine. “History of political and legal thought of Ukraine” is a system of knowledge that helps students to form a systemic approach to understanding of the nature and content of the notions of “law”, “right”, “state” of the Ukrainian state. The aim of this course is to equip students with knowledge about the nature and development of the law and the state in view of theoretical and legal ideas of national scientists of different times and form a high historical and theoretical culture during mastering of the profession of “lawyer”, to give knowledge to the students on the history of the development of the theory of law and state, to develop in them a special legal thinking, which is necessary for the assimilation and application of the law.

International data protection law. The aim of the course of international data protection law is to the make students realize the value of the rules of law which govern the search, receiving, production and distribution of information internationally, as well as the growing role of international legal acts in the light of the guaranteed right for freedom of expression, inextricable link of the norms of the law with their practical application by the relevant authorities. The task of studying of the course is to familiarize with the most important sources of international data protection law, learning the most important normative acts, mastering the skills of how to work with them, study the principles of law and mastering the skills of how to use their content during solving specific problems and issues.

Ukrainian studies. The emergence and development of Ukrainian studies is going in the systematic unity with the emergence and development of the Ukrainian ethnos, people and nation. In its development Ukrainian studies as a science and educational subject has come a long and difficult way: from the poetic image of the Ukrainian thorns, reflected in folklore, from the first written records of historians, disaggregated data of foreign researchers and travellers, up to systematic thematic expositions, history – graphical and – philosophy descriptions of the Ukrainian discourse and research of this heritage in scientific papers and its study in the education system.

2.2.3. Cycle of professional and practical training

Notary in Ukraine. Notary in Ukraine is a system of bodies and officials entrusted with the duty to certify the law and facts, which have having value, and perform other notary actions, prescribed by the law, with the purpose of giving them legal validity. Study of subject "Notary in Ukraine " is the important and integral part of higher education of students who chose the profession of a lawyer, because their responsibilities will include not only knowledge of laws and regulations, but also to application and explanation of them to others.

Criminology. While studying the subject the listener learns such knowledge as theoretical material with regard to the concept, the subject, the method of criminology as an education subject, subject, tasks of criminology as a science, legislation, which regulates the prevention of crime as whole and its separate types.

Practice of law in Ukraine. Advocacy is the integral factor in the legal system and the main non-state Institute of protection of the individual, his / her rights and freedoms in civilized democratic countries. Almost all international human rights acts, ranging from the Common declaration and finishing with the Main provisions about the role of lawyers, consider the right to receive professional legal assistance as one of the most important rights of each person.

Energy law. During the last years in the world and in Ukraine in particular, the rapid development of the energy industry is accompanied by the same rapid development of legislation in this field. The scope of energy law regulation: protection and assistance to foreign investments in the energy field, based on spreading equality between aliens and nationals or most-favoured-nations regime; energy resources and materials free trade, based on the rules of the World trade organization; freedom of energy transit through pipelines and their networks; reduction of the negative impact of a complete energy cycle on the environment due to improving efficiency of the energy sector; mechanisms to resolve inter-state disputes and disputes between the state and the investor.

Administrative procedure. The purpose of the course «Administrative procedure» is the deep study of legal forms and methods, constitutional and legislative framework and human rights protection methods. Because it is the rules of administrative procedure, which provide recognition of the rights, duties and interests of natural or legal persons in the public sphere and their protection using management, installation and judicial means. The provisions of administrative procedure law of Ukraine define the procedure, conditions and measures for consideration and solution of specific administrative cases.

2.10. EDUCATIONAL AND RESEARCH INSTITUTE OF BUSINESS

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FACULTY OF ECONOMICS

PhD **Dean**, Associate Professor Kaminska Tetyana Hrihoriivna
Tel.: (044) 527-80-06, E-mail: economy_dean@twin.nauu.kiev.ua
Location: building № 10 rooms. 313

Faculty organizes and coordinates the educational process of bachelors in the following specialties:

6.030504 "Economics of Enterprise"

Department in charge of training graduates:
Economy Enterprise Tel.: (044) 527-89-78 E-mail: dibrova@nubip.edu.ua
Head of Department, Prof. Anatoly Dmitrievich Dibrova

6.030508 "Finance and Credit"

Department in charge of training graduates:
Finance and Credit
Tel.: (044) 527-87-59, E-mail: tax_chair@twin.nauu.kiev.ua
Head of Department, Prof. Khudoliy Lyubov Mikhailivna

6.030509 "Accounting and Audit"

Department in charge of training graduates:
Accounting, analysis and audit
Tel.: (044) 527-83-61, E-mail: book-keep_char@twin.nauu.kiev.ua
Head of Department - Professor Kalyuha Evgeniia Vasyliivna

FACULTY OF AGRICULTURAL MANAGEMENT

Dean - Doctor of Economics, Professor Ohrimenko Igor Vitaliiovich
Tel.: (044) 527-85-73, E-mail: agromen_dean@twin.nauu.kiev.ua
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Faculty organizes and coordinates the educational process of bachelors in the following specialies:

6.030507 "Marketing"

Department in charge of training graduates:
Marketing and International Trade
Tel.: (044) 527-89-78 E-mail: market_chair@twin.nauu.kiev.ua
Head - Candidate of Economic Sciences, Professor Sergei Ivanoviich Chebotar

6.030601 "Management"

Department in charge of training graduates:
Management University. prof. Y.S.Zavadskoho
Tel.: (044) 527-84-80, E-mail: manage_chair@twin.nauu.kiev.ua
Head - Doctor of Economics, Professor Horovii Vasily Pavlovich

World Agriculture and International Management
Tel.: (044) 527-86-51, E-mail: worldagro_chair@twin.nauu.kiev.ua
Head - Doctor of Economics, Professor Valery Halushko

Bachelor
in specialty "ECONOMICS OF ENTERPRISE"
field of knowledge "Economics and Entrepreneurship"

Form of learning, licensed study amount:	
– full-time	125 persons
– extramural	165 persons
Term of study	4 years
Credits	240 ECTS
Language of instruction	Ukrainian, English
Qualification of graduates	Bachelor in Economics of enterprise

The concept of training

Training of specialists in the field of "Business Economics" can provide high-level scientific and economic and organizational activities of the company. to be able to develop measures to improve productivity, efficiency and profitability, product quality, reduce costs, ensure productivity growth, achieving effective results with reasonable cost of material, labor and financial resources and organizing their implementation. Be able to prepare business plans, future plans of the company in a market economy and competition with the necessary justifications and calculations, organizational and technical measures to improve the economic mechanism, management structure, economic activity, identification and use of reserves. To ensure sustainable development of the primary planning, accounting and records, which is used in the enterprise, and also participates in the implementation of automated control systems and computer technology for economic calculations in planning, accounting and business analysis.

Practical training

Practical training is an integral part of the educational process of training different educational levels in economics. Acquiring practical skills highly professional specialist possible only with a direct involvement in industrial production processes on the basis of agricultural-industrial enterprises of different ownership forms and sub-research institutions.

Proposed Topics for Bachelor theses

1. Employment in rural areas.
2. Social and economic development of rural areas.
3. The development of small forms hosodpryuvannya the countryside.
4. Organization ahrobizensu the agricultural enterprise.
5. Organization and development prospects of the farm.
6. Potential and prospects of agricultural enterprises.

Academic rights of Bachelors – students can continoue their studying in the Master Programme in specialty 8.03050401 "Business Economics":

or field of knowledge 1801 "Specific categories":

8.18010010 – "Quality, standardization and certification"

8.18010018– «Administrative Management»

8.18010020 – «Management of the institution»

8.18010021 – «Pedagogy of High School»

Spheres of Bachelors employment

Chief Economist, Chief economist of planning and finance department, chief economist of the organization of labor and wages, chief economist of the organization of labor and wages, Head of Laboratory Research Organization and Management, Economist, Economist, Planning, economist at the contract pretentious works, a financial economist at work, managers and assistants economic departments of companies, associations, firms serving agricultural areas of different ownership and more.

Bachelors Program and Curriculum in Specialty "Economics of Enterprise"

№	The name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training					
1	Ukrainian language (for professional purposes)	2	108	2,0	3,0
2	History of Ukraine	1	108	2,0	3,0
3	The history of Ukrainian culture	1	72	1,3	2,0
4	Foreign Language	1-3	180	3,3	5,0
5	Philosophy	3	108	2,0	3,0
6	Physical Education **	1-4	216	4,0	6,0
Total for the cycle			***576***	***10,6***	***16***
1.2. Cycle of natural science (fundamental) training					
1	Political Economy	1-2	180	3,3	5,0
2	Higher Mathematics	1-2	252	4,6	7,0
3	Probability Theory and Mathematical Statistics	3	180	3,3	5,0
4	Informatics	1-4	216	4,0	6,0
5	Microeconomics	3	144	2,6	4,0
6	Economics and History of Economic Thought	1	180	3,3	5,0
7	Macroeconomics	4	144	2,6	4,0
8	Optimization Methods and Models	5	144	2,6	4,0
9	Econometrics	5	108	2,0	3,0
Total for the cycle			***1548***	***28,6***	***43,0***
1.3. Cycle of professional and practical training					
1	Potential and development of enterprise	6	180	3,3	5,0
2	Business Strategy	8	**180**	**3,3**	5,0
3	Planning and control of the enterprise	8	**180**	**3,3**	5,0
4	The organization of production	7	180	3,3	5,0
5	Economics and organization innovation	7	144	2,6	4,0
6	Project Analysis	8	180	3,3	5,0
7	Justification economic decisions and assessing risks	6	180	3,3	5,0
8	Statistics	3-4	144	2,6	4,0
9	Money and credit	4	144	2,6	4,0
10	Accounting	4-5	144	2,6	4,0
11	Business Economics	5	360	6,6	10,0
12	Finances	5	144	2,6	4,0
13	Labor Economics and Labor Relations	6-7	144	2,6	4,0
14	Management	7	144	2,6	4,0
15	Marketing	7	144	2,6	4,0
16	International Economics	7	144	2,6	4,0
17	Sociology	4	108	2,0	3,0
18	Regional Economics	3	144	2,6	4,0
19	Safety	3	36	0,6	1,0
20	Occupational Health	3	72	1,3	2,0
21	Cost Control	8	144	2,6	4,0
Total for the cycle			***3240***	***60,0***	***90,0***
Regulatory part, total			**5364**	**99,0**	**149,0**
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of natural science (fundamental) training					
1	Jurisprudence	4	180	3,3	5,0
2	Politics	6	108	2,0	3,0
3	Psychology and Pedagogy	5	72	1,3	2,0
4	Sociology of work	5	108	2,0	3,0
5	Family everyday culture	3	72	1,3	2,0
6	University education	1	36	0,6	1,0

7	Social communications	3-4	36	0,6	1,0
8	Ecology and environmental economics	4	108	2,0	3,0
9	The technology of crop production	2	108	2,0	3,0
10	Tech livestock production	2	144	2,6	4,0
11	Technology of storage, processing and standardization of agricultural products	3	108	2,0	3,0
12	Agriculture is the basics of soil science and agricultural chemistry	1	72	1,3	2,0
13	Insurance	6	72	1,3	2,0
14	Investing	6	72	1,3	2,0
15	The basic of biotechologies	7	36	0,6	1,0
Total for the cycle			**1332**	**24,6**	**37,0**
2.1.2. . Cycle of professional and practical training					
1	Agricultural Management	8	72	1,3	2,0
2	Basics of stock activity	7	108	3	3,0
3	Governance	7	72	1,3	2,0
4	Stock market	8	72	1,3	2,0
5	Fundamentals of Agricultural Consulting	8	72	1,3	2,0
6	Organization of agribusiness	8	72	1,3	2,0
7	Socio-economic development of rural areas	8	72	1,3	2,0
8	Information systems and technology in the enterprise	6	108	2,0	3,0
9	The internal economic mechanism of enterprise	7	108	2,0	3,0
10	Basic research in economics	6	72	1,3	2,0
11	Finance of Companies	6	144	2,6	4,0
12	Economic Analysis	6-7	144	2,6	4,0
13	State Regulation of Economy	8	108	2,0	3,0
14	The economy of world agriculture	5	108	2,0	3,0
15	Databases and System of Databases Management	5	108	2,0	3,0
16	Economics of Agriculture	6	108	2,0	3,0
17	Audit	8	72	1,3	2,0
18	Tax System	5	108	2,0	3,0
Total for the cycle			***1728***	***32,0***	***48,0***
Chosen by university, total			***3060***	***56,6***	***85,0***
Elective part, total			**3060**	**56,6**	**85,0**
Practical training			**72**	**1,3**	**2,0**
Degree examination			**144**	**2,6**	**4,0**
Total, according to the field of study			**8640**	**160**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.

**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

The annotations of discipline "Ukrainian language (for professional purposes)" "History of Ukraine", "The history of Ukrainian culture", "Foreign Language", "Philosophy", "Physical Education" see. Section 2.1.

1.2. Cycle of natural science (fundamental) training

Political Economy. Commodity production and business. Social reproduction and growth. Basic social forms of production and their evolution. World economy and the world market.

Higher Mathematics. Provides: identity formation of students develop their intellect, skills, logical and algorithmic thinking, mastering the basics of mathematical tools needed to solve theoretical and practical problems of the economy, the ability to independently examine the scientific literature on mathematics and apply it, and improve your overall mathematical culture, develop ability to make mathematical models of various economic processes and to develop skills of mathematical research applications, training methods of processing and analyzing the results.

Probability Theory and Mathematical Statistics. Events probable repetition of experiments, the laws of probability distribution, numerical characteristics of random variables and functions of random variables, limit theorems of probability theory, probability models of economic problems.

Informatics. Methods work on PC with algorithmic programming languages, the structure of the program and recommendations for its writing. It TurboPascal, examples of its application to solving economic problems.

Microeconomics. Modern elements of microeconomic environment and their activities in a socially oriented market economy. Techniques and methods of economic decision-making at the micro level to the survival of businesses in today's economic environment functioning market economy.

History of Economics and Economic Thought. Economic theory in the era of pre-capitalist modes of production. Classical school of bourgeois political economy. Economic thought in Ukraine. Keynesianism, Neoliberalism and its various forms. Development of Soviet economic thought. Economic thought in transition.

Macroeconomics. Macroeconomic processes in the construction and development of market economy in Ukraine. Detection system, ways of solving problems on their achievements. Establishing relationships and determine the order of relationships between objects and subjects macroscopic environment. Addressing macroeconomic objectives.

Optimization Methods and Models. Creating models of economic systems through a variety of economic-mathematical models and solving problems to anticipate and manage the construction of modern agricultural enterprises. Methods of nonlinear programming, solving transportation problem, solving current economic problems for agriculture production.

Econometrics. The purpose of discipline "Econometrics" is of students' knowledge of the quantitative assessment of the relationship between economic indicators for different sets of economic information going into the last test of the appropriateness of certain prerequisites and to determine methods for quantitative measurement of links that are useful in each case in accordance with the peculiarities of economic information.

1.3. Cycle of professional and practical training

Potential and development enterprise. The acquisition of conceptual structure, methodology and application testing tools market value potential of the company and its structural elements, acquiring knowledge of the laws, principles and features of the formation and development potential of the company.

Business Strategy. The acquisition of theoretical principles of strategic planning, mastering the skills and tools Arius strategic analysis and a strategy of the company.

Planning and control of the enterprise. Developing the knowledge on the methodology of developing prospective and current plans of the company and control their execution.

The production organisation. Formation of theoretical knowledge and skills of rational organization of production and use of methods to increase efficiency of production of industrial enterprises

Economics and organization innovation. Formation of theoretical knowledge and skills of rational and economic grounds for innovation company with current trends in the development of innovative economy.

Project Analysis. Formation of system understanding of the principles, methods and tools making design decisions, which enables efficient use of available resources to meet the public and their own needs.

Justification of economic decisions and assessing risks. Formation of knowledge and skills in relation to study business decisions with varying degrees of uncertainty and risk.

Statistics. Organization observations, reduction and analysis of data using statistical methods groupings, averages and indicators of variation, dispersion and correlation calculations, estimates time-spatial changes in mass public events.

Money and credit. The origin, nature and function of money and credit, Forms of money and credit relations, the structure of monetary and credit systems, the laws of money, the stability of financial systems and areas of improvement of monetary and credit relations in Ukraine and particularly in agriculture.

Accounting. Subject and method of accounting. Balance. Documentation as part of the method of accounting system accounts. Methodology Accounting business processes. Chart of Accounts. Registers and forms of accounting.

Business Economics. Economic mechanism of operation of the business, development and use of its resource potential in order to optimize economic performance

Finances. The essence of the types and functions of finance agriculture. Finance Companies, development and use of revenue, working capital, lending, financial support, playback of fixed assets, the financial performance of companies and their evaluation.

Labor Economics and Labor Relations. Examines the methodology and methods of analysis of internal labor market planning and analysis of employment performance in the enterprise, the acquisition of skills for solving practical problems of labor economics.

Management. Theoretical Foundations of Management, the manager of the control system. Motivation and rules of managerial activities. The mechanism of control and responsibility in the management system

Marketing. The nature, content and marketing his concept, the system and the characteristics of modern marketing and marketing policy: commodity, pricing, communication and distribution

International Economics. Marketing in foreign trade. Export-import of raw materials, industrial and agricultural goods. The joint business activities. Methods of foreign trade. State regulation of foreign economic relations.

Sociology. Sociological point. Formation of human behavior in the workplace activity and location in the process of motivation and the means of social control. The role of labor and small groups in the achievement of goals.

The regional economy. Scientific basis of productive forces and economic organization based on natural resources, scientific and technological progress. Features of the economy of certain regions of Ukraine.

Safety of life. Providing knowledge on maintaining efficiency and health in adverse environmental factors dwellings. Study of negative factors habitat and their impact on human life and health, practical skills protection of privacy in negative situations. Human life is under the influence of negative factors of natural, technological, social, political and military.

Occupational Health. Basic theory of safety. Occupational health and industrial hygiene. Safety of production processes. Explosion and fire safety. Electrical. Security for emergency response and disaster. Provide first aid to victims.

Management costs. Consider the basic methodology for determining and evaluating the production potential of the company, their planning and optimization to justify the costs of economic decisions when planning the development of enterprises.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.1.1. Cycle of natural science (fundamental) training

Jurisprudence. The legal status of various farms as agricultural producers. Legal regulation of -and inter-farm agricultural relations with logistics, ahroobsluhovuvannya. marketing of agricultural products.

Politics. Laws, structure and functions of political science. Power and power relations. The political system of society, the role and place in her state. Political consciousness and political culture. Politics and national relations. Politics and economics. National and state development of Ukraine.

Psychology and pedagogy. Developing the knowledge of the psyche of the individual as the highest value of society, understanding the nature of mechanisms of mental processes, states, personality traits as pillars of its formation in the process of education, training, and education. The acquisition of key terms and concepts of psychology and pedagogy at their reproduction and interpretation, gaining skills and basic skills to apply them in practice to improve competitiveness expert in social-psychological field. The human psyche, of the formation of the individual in the process of education, training, and education.

Sociology of Labor. Essence, content, nature and function of labor. Formation of human behavior in the workplace activity. The role of staff members and a small group in achieving production. Optimization of socio-psychological climate in the collective.

Family and household culture. shape students' scientific understanding of the patterns of marital relations and family life in the modern world. The course includes scientific knowledge about the historical origins of the family, its functions, the evolution of family relationships, the modern problem of division of labor, leadership, marital compatibility etc.

University education. preparing students for university studies in accordance with modern integration processes in international education within the context of the Bologna Declaration.

Ecology and environmental economics. Ecology and modern agriculture. Ecological agriculture and crop production. Ecological problems of livestock concentration. Environmental impact assessment, monitoring and predicting the use of mathematical modeling. Environmental law, legislative support. Interaction between environmental and economic factors, maintaining proper environmental quality, resource. Indicators of ecological, economic and social effectiveness of environmental protection measures, changes in psychological conditions and socio-hygienic conditions.

The technology of crop production. science foundation plant. Modern agricultural technologies. Process map of growing agricultural crops ¬ cal. The concept of programmable growing crops.

Tech livestock production. The current state of animal husbandry. Forage. Impact of normalized feeding, breeding, methods accepted at the level of their performance. Milk, meat, eggs, wool, etc..

Technology of storage, processing and standardization SH products. Basics of post-harvest processing (cleaning, drying, ventilating, cooling), storage and processing. Manufacturing Flour.

Agriculture is the basics of soil science and agricultural chemistry - Examines the laws of agriculture, plant life factors, methods of control, crop rotation, sowing crops, tillage and farming system.

Insurance. Essence, the principles and the role of insurance. Classification of insurance, insurance risks and their assessment. Insurance market and its characteristics, insurance organization, state regulation of insurance. Personal insurance. Property insurance companies and individuals.

Investing. Methodological foundations of investment. Forms, objects and areas of investment. Investment risks. Financial support for investment. Investment project budgeting and management of the investment process.

Fundamentals of biotechnology. The modern market of medical biotechnology, agriculture, food, energy and industrial use. Genetically modified organisms and their effects on humans. Modern multinational biotech companies.

2.1.2. Cycle of professional and practical training

Agricultural Management. Motivation and rules of farm management. The mechanism of control and accountability in the system of farm management. Methods of identification and evaluation of agricultural production processes, their planning and optimization in order to justify economic decisions when planning for enterprise development.

Fundamentals of exchange activities. Fundamentals of exchange activities. Commodity, stock, currency exchange. Exchange transaction, the order of execution and the mechanism of exchange trading.

Governance. Theoretical and institutional framework of government regulation of the economy. Forecasting, programming and macroeconomic planning in the state regulation of the economy. The methods of state regulation of the economy.

Stock market. Exchange operations. Commodity, stock, currency exchange. Exchange transaction, the order of execution and the mechanism of exchange trading in the stock market.

Fundamentals of Agricultural Consulting. Consulting (advisory) work as a management method and type of business. Exploring methods of working with farmers and rural population to perception, development and implementation of their innovations, using methods of mass dissemination, group and individual teaching methods and counseling, psychological and ethical aspects advisory.

Organization of agribusiness. Entrepreneurship and business in agriculture: the nature, objectives and benefits. Characteristics of entrepreneurs. Preparation of business plans.

Socio-economic development of rural areas. Priorities and effective levers and mechanisms of socio-economic development of rural areas, methods of analysis regarding the interdependence and interconnectedness of agriculture sector from external and internal factors in the transition economies.

Information systems and technology in the enterprise. Purpose and components of the information system, classification of information systems and technologies in the enterprise. Existing information systems and technologies in the agricultural sector

Internal mechanism of the enterprise. Consider the basic methodology for determining and evaluating agricultural production processes, their planning and optimization in order to justify economic decisions when planning for enterprise development.

Basic research in economics. Science education student research in economics, economic methodology of scientific research.

Finance of companies. Essence, types and functions of finance companies. The system of cashless and cash payments. Formation and use of gross and net income and earnings, working capital lending, financial support, playback of fixed assets

Economic Analysis. Concept, importance and types of economic analysis Methodical bases of analysis of own and borrowed funds. Methodical bases of assets analysis and analysis of revenues, costs, profitability. Analysis of liquidity and solvency.

State regulation of the economy. Theoretical and institutional framework of government regulation of the economy. Forecasting, programming and macroeconomic planning in the state regulation of the economy. The methods of state regulation of the economy.

The economy of world agriculture. The economy of world agriculture and foreign trade - Current state of world agriculture. Economic system and the overall performance of countries, Ukraine's place in global agriculture. The world market for agricultural products.

Databases and and system of database management. The concept of databases, database management systems. Data models. Database objects: tables forms, queries, reports, macros, modules. Linking tables. Import and export data.

Economy of Agriculture. The system of industrial relations in relation to the productive forces in agriculture. Ways and means of rational use of land, material and labor resources, intensification of agricultural production based on science and technology specialization, cooperation and integration of agricultural enterprises, the development of commodity-money relations, ways to improve production efficiency.

Auditing. Features of the elements of an organization registers synthetic and analytical accounting. Burned money, payments, inventory, fixed assets, intangible assets, remuneration systems, choices of production costs, determining the cost of production. Audit function: validation of the balance sheet and profit and loss account, the analysis of accounting, its compliance with the law, respect the rights of shareholders equity in the distribution of dividends and voting.

Tax system. Study of theoretical and institutional framework of taxation, calculation methodology and procedure for payment of taxes and mandatory payments businesses and individuals.

Bachelor
in specialty "FINANCE AND CREDIT"
field of knowledge "Economics and Entrepreneurship"

Form of training, licensed study amount:	
– full-time	150 persons
– extramural	140 persons
Term of study	4 years
Credits	240 ECTS
language of instruction	Ukrainian, English
Qualification of graduates	Bachelor in Finance and credit

The concept of training

In the field of «Finance and credit» are trained specialists who can provide a high level of financial and management accounting in the enterprise. Ensure the preparation of financial statements. Implement measures to determine the financial condition of the company and improve its operations. Exercise control over the conduct cash transactions, rational and efficient use of material, labor and financial resources. To be able to apply the theoretical and practical knowledge for effective management of the enterprise financial accounting. To be able to develop proposals to improve financial. Accounting and Economics at the company.

Practical training

Practical training is an integral part of the educational process of training different educational levels in economics. Acquiring practical skills highly professional specialist possible only with a direct involvement in industrial production processes on the basis of agro-industrial enterprises of different ownership forms and sub-research institutions.

Proposed Topics for Bachelor theses

1. Formation and distribution of income in the agricultural enterprises.
2. Status and prospects of development of mortgage lending in Ukraine.
3. Pricing mechanism on the agricultural market.
4. The effectiveness of tovarnoh exchange and ways to improve it.
5. Insurance of bank loans
6. Insurance Market in Ukraine: current state and prospects.

Academic rights of Bachelors can continue their studies in the Master Programmer in specialties 8.03050801 "Finance and Credit" and 8.03050803 "Taxation":

or field of knowledge 1801 "Specific categories":

8.18010010 «Quality, standardization and certification"
8.18010018 «Administrative Management"
8.18010020 «Management of Educational Institutions"
8.18010021 «Higher School of Pedagogy"

Spheres of Bachelors employment

Finance, chief economist of planning and finance department, chief, chief scientific laboratory organization and management of production, Economist, Economist, Planning, economist at the contract pretentious work, financial economist, Head and helps finance departments of companies, associations, firms serving agriculture sector different ownership and more.

Bachelors Program and Curriculum in Specialty "Finance and Credit"

№	The name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training*					
1	Ukrainian language (for professional purposes)	2	108	2,0	3,0
2	History of Ukraine	1	108	2,0	3,0
3	The history of Ukrainian culture	1	72	1,3	2,0
4	Foreign Language	1-2	180	3,3	5,0
5	Philosophy	3	108	2,0	3,0
6	Physical Education **	1-4	216	4,0	6,0
Total for the cycle			***576***	***10,6***	***16***
1.2. Cycle of natural science (fundamental) training					
1	Political Economy	1-2	180	3,3	5,0
2	Higher Mathematics	1-2	252	4,6	7,0
3	Probability Theory and Mathematical Statistics	3	180	3,3	5,0
4	Informatics	1-3	216	4,0	6,0
5	Microeconomics	4	144	2,6	4,0
6	Economics and History of Economic Thought	1	180	3,3	5,0
7	Macroeconomics	3	144	2,6	4,0
8	Optimization Methods and Models	6	144	2,6	4,0
9	Econometrics	4	108	2,0	3,0
Total for the cycle			***1548***	***28,6***	***43,0***
1.3. Cycle of professional and practical training					
1	Safety	2	72	1,3	2,0
2	Tax System	7-8	180	3,3	5,0
3	sociology	3	144	2,6	4,0
4	Finance Companies	6	180	3,3	5,0
5	insurance	7	180	3,3	5,0
6	The budget system	5	144	2,6	4,0
7	Investment	7	144	2,6	4,0
8	Statistics	3-4	144	2,6	4,0
9	Money and credit	3-4	360	6,6	10,0
10	Finances	4-5	360	6,6	10,0
11	Accounting	4	144	2,6	4,0
12	Regional Economics	5	144	2,6	4,0
13	Business Economics	5	144	2,6	4,0
14	Management	5	144	2,6	4,0
15	Marketing	6	144	2,6	4,0
16	Labor Economics and Labor Relations	5	144	2,6	4,0
17	International Economics	6	144	2,6	4,0
18	Banking system	7	180	3,3	5,0
19	Financial Market	7	144	2,6	4,0
Total for the cycle			***3240***	***60,0***	***90,0***
Regulatory part, total			**5364**	**99,0**	**149,0**
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1 Disciplines chosen by University					
2.1.1. Cycle of natural science (fundamental) training					
1	Psychology and pedagogy	5	72	1,3	2,0
2	Politics	4	72	1,3	2,0
3	University education	1	36	0,6	1,0
4	Family and domestic culture	1	72	1,3	2,0
5	Religion	3	72	1,3	2,0
6	Sociology of work	3	72	1,3	2,0
7	Occupational Health	3	72	1,3	2,0
8	Sots.komunikatsiyi	2	36	0,6	1,0
9	Jurisprudence	5	72	1,3	2,0

Total for the cycle			**576**	**10,6**	**16,0**
2.1.2. Cycle of natural science (fundamental) training					
1	The technology of crop production	2	108	2,0	3,0
2	Tech livestock production	2	144	2,6	4,0
3	Agriculture is the basics of soil science	1	72	1,3	2,0
4	Technology of processing, storage and standardization of agricultural products	4	72	1,3	2,0
5	environmental Economics	4	72	1,3	2,0
6	Financial Accounting	5	72	1,3	2,0
7	Management Accounting	6	72	1,3	2,0
8	Economic and financial risks	5	72	1,3	2,0
9	Economics of Agriculture	6	108	2,0	3,0
10	Economic Analysis	6	72	1,3	2,0
11	Databases and DBMS	6	72	1,3	2,0
12	Price and Pricing	6	36	0,6	1,0
13	Economics and Organization Ahroservis	6	36	0,6	1,0
14	Organization and planning of agricultural production units	8	108	2,0	3,0
15	Organization of agribusiness	7	72	1,3	2,0
16	Production Management	8	72	1,3	2,0
17	Basics of stock	8	72	1,3	2,0
18	Audit	8	72	1,3	2,0
19	The economy of world agriculture	7	72	1,3	2,0
20	Basics of biotechnology	5	36	0,6	1,0
Total for the cycle			***1584***	***29,3***	***44,0***
2.1.3. Cycle of professional and practical training					
1	Accounting in Banks	7	36	0,6	1,0
2	Stock stock market	8	72	1,3	2,0
3	Financial Law	8	72	1,3	2,0
4	Information Systems and Technology in finance	8	72	1,3	2,0
5	The national economy	8	108	2,0	3,0
6	Insurance Services	8	144	2,6	4,0
7	Financial Analysis	7	144	2,6	4,0
8	Finance businesses	7	144	2,6	4,0
9	Local finance	6	108	2,0	3,0
10	Physical Education	1-4	216	4,0	6,0
Total for the cycle			***1116***	***20,6***	***31,0***
Chosen by university, total			***3060***	***56,6***	***85,0***
Elective part, total			**3060**	**56,6**	**85,0**
Practical training			**72**	**1,3**	**2,0**
Degree examination			**144**	**2,6**	**4,0**
Total, according to the field of study			**8640**	**240**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.
**Physical training is included into curriculum (30 h), but is not credited.

Annotations disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Annotations disciplines "Ukrainian language (for professional purposes)," "History of Ukraine", "The history of Ukrainian culture", "Foreign Language", "Philosophy", "Physical Education" see. Section 2.1.

1.2. Cycle of natural science (fundamental) training

Political Economy. Commodity production and business. Social reproduction and growth. Basic social forms of production and their evolution. World economy and the world market.

Higher mathematics. Provides: identity formation of students develop their intellect, skills, logical and algorithmic thinking, mastering the basics of mathematical tools needed to solve theoretical and practical problems of the economy, the ability to independently examine the scientific literature on mathematics and apply it, and develop the ability to make mathematical models of certain other economic processes and to develop skills of mathematical research applications, training methods of processing and analyzing the results.

Probability Theory and Mathematical Statistics. Events probable repetition of experiments, the laws of probability distribution, numerical characteristics of random variables and functions of random variables, limit theorems of probability theory, probability models of economic problems.

Informatics. Methods work on PC with algorithmic programming languages, the structure of the program and recommendations for its writing. It TurboPascal, examples of its application to solving economic problems.

Microeconomics. Modern elements of microeconomic environment and their activities in a socially oriented market economy. Techniques and methods of economic decision-making at the micro level to the survival of businesses in today's economic environment functioning market economy.

History of Economics and Economic Thought. Economic theory in the era of pre-capitalist modes of production. Classical school of bourgeois political economy. Economic thought in Ukraine. Keysianstvo, Neoliberalism and its various forms. Development of Soviet economic thought. Economic thought in transition.

Macroeconomics. Macroeconomic processes in the construction and development of market economy in Ukraine. Detection system, ways of solving problems on their achievements. Establishing relationships and determine the order of relationships between objects and subjects macroscopic environment. Addressing macroeconomic objectives.

Optimization Methods and Models. Creating models of economic systems through a variety of economic-mathematical models and solving optimization problems to anticipate and manage the construction of modern agricultural enterprises. Methods of nonlinear programming, solving transportation problem, solving current economic problems of agricultural production.

Econometrics. The purpose of discipline "Econometrics" is of students' knowledge of the quantitative assessment of the relationship between economic indicators for different sets of economic information going into the last test of the appropriateness of certain prerequisites and to determine methods for quantitative measurement of links that are useful in each case in accordance with the peculiarities of economic information.

1.3. Cycle of professional and practical training

Safety. Providing knowledge on maintaining efficiency and health in adverse environmental factors dwellings. Study of negative factors habitat and their impact on human life and health, practical skills of privacy protection in adverse situations. Human life is under the influence of negative factors of natural, technological, social, political and military.

The tax system. Study of theoretical and institutional framework of taxation, calculation methodology and procedure for payment of taxes and mandatory payments businesses and individuals.

Sociology. Sociological point. Formation of human behavior in the workplace activity and location in the process of motivation and the means of social control. The role of staff members and a small group in achieving production.

Finance of companies. Essence, types and functions of finance companies. The system of cashless and cash payments. Formation and use of gross and net income and earnings, working capital lending, financial support, playback of fixed assets

Insurance. Essence, the principles and the role of insurance. Classification of insurance, insurance risks and their assessment. Insurance market and its characteristics, insurance organization, state regulation of insurance. Personal insurance. Property insurance companies and individuals.

The budget system. Formation of knowledge on the organization and functioning of the fiscal system and fiscal policy.

Investing. Methodological foundations of investment. Forms, objects and areas of investment. Investment risks. Financial support for investment. Investment project budgeting and management of the investment process.

Statistics. Organization observations, reduction and analysis of data using statistical methods groupings, averages and indicators of variation, dispersion and correlation calculations, estimates time-spatial changes in mass public events.

Money and credit. The origin, nature and function of money and credit, Forms of money and credit relations, the structure of monetary and credit systems, the laws of money, the stability of financial systems and areas of improvement of monetary and credit relations in Ukraine, particularly in agriculture.

Finance. The essence of the types and functions of finance agriculture. Finance Companies, development and use of revenue, working capital, lending, financial support, playback of fixed assets, the financial performance of companies and their evaluation.

Accounting. Subject and method of accounting. Balance. Documentation as part of the method of accounting system accounts. Methodology Accounting business processes. Chart of Accounts. Registers and forms of accounting.

The regional economy. Scientific basis of productive forces and economic organization based on natural resources, scientific and technological progress. Features of the economy of certain regions of Ukraine.

Business Economics. Economic mechanism of operation of the business, development and use of its resource potential in order to optimize economic performance

Management. Theoretical Foundations of Management, the manager of the control system. Motivation and rules of managerial activities. The mechanism of control and responsibility in the management system

Marketing. The nature, content and marketing his concept, the system and the characteristics of modern marketing and marketing policy: commodity, pricing, communication and distribution

Labor Economics and Labor Relations. Examines the methodology and methods of analysis of internal labor market planning and analysis of employment performance in the enterprise, the acquisition of skills for solving practical problems of labor economics.

International Economics. Marketing in foreign trade. Export-import of raw materials, industrial and agricultural goods. The joint business activities. Methods of foreign trade. State regulation of foreign economic relations.

Banking system. the theoretical knowledge of the banking system, the National Bank of Ukraine and commercial banks exercise their operations and services.

Financial Market. General theoretical framework and principles of financial markets, the theoretical and practical knowledge of the foundations of the functioning and development of the financial market as a subsystem of financial relations.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.1.1. Cycle of humanitarian, social and economic training

Psychology and pedagogy. Developing the knowledge of the psyche of the individual as the highest value of society, understanding the nature of mechanisms of mental processes, states, personality traits as pillars of its formation in the process of education, training, and education. The acquisition of key terms and concepts of psychology and pedagogy at their reproduction and interpretation, gaining skills and basic skills to apply them in practice to improve competitiveness expert in social-psychological field.

Politics. Laws, structure and functions of political science. Power and power relations. The political system of society, the role and place in her state. Political consciousness and political culture. Politics and national relations. Politics and economics. National and state development of Ukraine.

University education. Preparation of students for university studies in accordance with modern integration processes in international education within the context of the Bologna Declaration.

Family and household culture. Sormuvaty students' scientific understanding of the patterns of marital relations and family life in the modern world. The course includes scientific knowledge about the historical origins of the family, its functions, the evolution of family relationships, the modern problem of division of labor, leadership, marital compatibility etc.

Religion. It is a comprehensive knowledge of the humanities, studying the patterns of occurrence, history and general characteristics of religious beliefs. Researching the socio-historical nature of religion, the mechanism of social ties with the spiritual, political and economic systems of society. Study subjects enables students to replace the natural religion conscious philosophy promotes ownership and achievements of world and national culture and a balanced attitude towards different religious beliefs.

Sociology of Labor. Essence, content, nature and function of labor. Formation of human behavior in the workplace activity. The role of staff members and a small group in achieving production. Optimization of socio-psychological climate in the collective.

Occupational Health. Basic theory of safety. Occupational health and industrial hygiene. Safety of production processes. Explosion and fire safety. Electrical. **Security for emergency response and disaster. Provide first aid to victims.**

Jurisprudence. The legal status of various farms as agricultural producers. Legal regulation of intra-and inter-farm agricultural relations with logistics, agricultural service. marketing of agricultural products.

2.1.2. Cycle of natural science (fundamental) training

The technology of crop production. Scientific bases of crop production. Modern agricultural technologies. Process map of growing agricultural crops ¬ cal. The concept of programmable growing crops.

Tech livestock production. The current state of animal husbandry. Forage. Impact of normalized feeding, breeding, methods accepted at the level of their performance. Milk, meat, eggs, wool, etc..

Agriculture is the basics of soil science and agricultural chemistry. Learn the laws of agriculture, plant life factors, methods of control, crop rotation, sowing crops, tillage and farming system.

Technology of storage, processing and standardization SH products. Basics of post-harvest processing (cleaning, drying, ventilating, cooling), storage and processing. Manufacturing Flour.

Economics. Ecology and modern agriculture. Ecological agriculture and crop production. Ecological problems of livestock concentration. Environmental impact assessment, monitoring and predicting the use of mathematical modeling. Environmental law, legislative support. Interaction between environmental and economic factors, maintaining proper environmental quality, resource. Indicators of ecological, economic and social effectiveness of environmental protection measures, changes in psychological conditions and socio-hygienic conditions.

Financial Accounting. Studying methods and management of the business accounting assets using advanced forms and national standards.

Management Accounting. Study of the principles and techniques of management accounting, its place and role in the management of the company; acquiring skills applicable wool ¬ appropriate methods and techniques in the process of **cost accounting and calculation to adopting effective management decisions.**

Economic and financial risks. the theoretical knowledge and practical skills in relation to economic and financial risks justify business decisions with varying degrees of uncertainty and risk.

Economy of Agriculture. system of industrial relations in relation to the productive forces in agriculture. Ways and means of rational use of land, material and labor resources, intensification of agricultural production based on science and technology specialization, cooperation and integration of agricultural enterprises, the development **of commodity-money relations, ways to improve production efficiency.**

Economic Analysis. Concept, importance and types of economic analysis Methodical bases of analysis of own and borrowed funds. Methodical bases of assets analysis and analysis of revenues, costs, profitability. Analysis of liquidity and platizhezdatnosti.

Databases and System of Databases Management The concept of databases, database management systems. Data models. Database objects: tables forms, queries, reports, macros, modules. Linking tables. Import and export data.

Price and pricing. Pricing theory, method of pricing. Marginal utility prices, methodological atypical pricing in an inflationary environment, ensuring equivalence of accounting and pricing in agriculture.

Economics and Organization of Ahriservice Planning and organization of agricultural production service companies. The improvement of economic relations between production and service areas APC.

Organization and planning of agricultural production units. Formation of theoretical knowledge and skills of rational organization of production and use of methods to increase efficiency of production of industrial enterprises, the formation of knowledge on the methodology of developing prospective and current plans of the company and control their execution.

Organization of agribusiness. Entrepreneurship and business in agriculture: the nature, objectives and benefits. Characteristics of entrepreneurs. Preparation of business plans.

Productional Management. Consider the basic methodology for determining and evaluating agricultural production processes, their planning and optimization in order to justify economic decisions when planning for enterprise development.

Fundamentals of exchange activities. Fundamentals of exchange activities. Commodity, stock, currency exchange. Exchange transaction, the order of execution and the mechanism of exchange trading.

Auditing. Features of the elements of an organization registers synthetic and analytical accounting. Burned money, payments, inventory, fixed assets, intangible assets, remuneration systems, choices of production costs, determining the cost of production. Audit function: validation of the balance sheet and profit and loss account, the analysis of accounting, its compliance with the law, respect the rights of shareholders equity in the distribution of dividends and voting.

Economy of world agriculture. The current state of world agriculture. Economic system and the overall performance of countries, Ukraine's place in global agriculture. The world market for agricultural products.

Fundamentals of biotechnology. The modern market of medical biotechnology, agriculture, food, energy and industrial use. Genetically modified organisms and their effects on humans. Modern multinational biotech companies.

2.1.3. Subjects of professional and practical training

Accounting in banks. General theoretical framework and principles of accounting, technical design and accounting software, accounting nomenclature and storage of accounting information, document management, accounting policy the bank account of the organization of basic banking transactions.

Stock market. Exchange operations. Commodity, stock, currency exchange. Exchange transaction, the order of execution and the mechanism of exchange trading in the stock market.

Financial Law. Theoretical Study finance, acquisition of skills analysis of the use of financial legislation, legal regulation of protection of the rights of citizens, businesses, government and other entities financial relationships.

Information Systems and Technology in finance. Learning the basics of financial science, of financial problems, especially their use in solving various economic information processing technologies, acquiring skills to perform accounting standard setting tasks, to develop algorithms for their solution using database management systems and application packages

National economy. Theoretical and institutional framework of government regulation of the economy. Forecasting, programming and macroeconomic planning in the state regulation of the economy. The methods of state regulation of the economy.

Insurance services. Formation of knowledge about the content and organization of insurers to meet the needs of legal entities and individuals in insurance services.

Financial analysis - Providing knowledge on how peer review of financial - economic activity and internal resources to strengthen the financial condition of the company. The theoretical basis of financial analysis. Overall financial condition of the company. Methods and techniques of financial analysis of agricultural Company.

Finance businesses. Acquisition of theoretical knowledge and practical skills related to financial business entities.

Local finance. Study of principles of organization of local finances, their governance structure and foundations based on the division of functions and powers of state and local governing bodies

Bachelor
in specialty "ACCOUNTING AND AUDIT"
field of knowledge "Economics and Entrepreneurship"

Form of training, licensed study amount:	
– full-time	150 persons
– extramural	215 persons
Term of study	4 years
Credits	240 ECTS
language of instruction	Ukrainian, English
Qualfication of graduaters	Bachelor in Acoounting and audit

The concept of training

In the field of "Accounting and Auditing" training specialists, focused on in-depth study of the theory and practice of accounting and auditing in the agricultural sector of the economy. An important direction of such training is motivation for independent work, the development of the creative activity of finding effective solutions to the problems studied, acquiring skills to the study of scientific literature, legislation, and on this basis, the ability to meet international standards organization to critically evaluate your process analysis and audits on specific companies, to develop effective proposals to improve the accounting and economic work to improve management in general.

Practical training

Practical training is an integral part of the educational process of training different educational levels in economics. Acquiring practical skills highly professional specialist possible only with a direct involvement in industrial production processes on the basis of agro-industrial enterprises of different ownership forms and sub-research institutions.

Proposed Topics for Bachelor theses

1. Accounting and inventory analysis
2. Accounting and cash flow analysis
3. Accounting and analisys of wage
4. Accounting, fnflysis and auditing of banks
5. Accounting, analysis and auditing of bioeconomics enterprises
6. Accounting, analysis and auditing of the subjects of the public sector

Academic rights of Bachelors can continue their studies in the Master Programme in specialties signs which are placed in the curricula of undergraduate programs, beginning with the second or third courses:

8.03050901 "Accounting and Auditing"
or field of knowledge 1801 "Specific categories":
8.18010010 «Quality, standardization and certification"
8.18010018 «Administrative Management"
8.18010020 «Management of Educational Institutions"
8.18010021 «Higher School of Pedagogy"

Spheres of Bachelors employment

Chief Accountant, Deputy Chief Accountant, Lead Accountant, Head clerk, accountant and category, second category Accountant, accountant, auditor, assistant auditor Lead auditor, auditor and category; auditor of the second category, auditor, accountant expert, specialist, accountant, chief auditor, chief cashier, etc.

Bachelors Program and Curriculum in specialty "Accounting and audit"

№	The name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training *					
1	Ukrainian language (for professional purposes)	2	108	2,0	3,0
2	History of Ukraine	1	108	2,0	3,0
3	The history of Ukrainian culture	1	72	1,3	2,0
4	Foreign Language	1-2	180	3,3	5,0
5	philosophy	3	108	2,0	3,0
6	Physical Education **	1-4	216	4,0	6,0
Total for the cycle			***576***	***10,6***	***16***
1.2. Cycle of natural science (fundamental) training					
1.	Political Economy	1-2	180	3,3	5,0
2.	Microeconomics	4	144	2,7	4,0
3.	Macroeconomics	3	144	2,7	4,0
4.	Economics and History of Economic Thought	1	180	3,3	5,0
5.	Higher Mathematics	1-2	252	4,7	7,0
6.	Probability Theory and Mathematical Statistics	3	180	3,3	5,0
7.	Optimization Methods and Models	6	144	2,7	4,0
8.	Econometrics	5	108	2,0	3,0
9.	Information	1-3	216	4,0	6,0
Total for the cycle			***1548***	***28,7***	***43,0***
1.3. Cycle of professional and practical training					
1.	Business Economics	5	144	2,7	4,0
2.	Management	7	144	2,7	4,0
3.	Marketing	7	144	2,7	4,0
4.	Money and Credit	4	144	2,7	4,0
5.	finances	5	144	2,7	4,0
6.	Accounting (general theory)	3-4	288	5,3	8,0
7.	Labor Economics and Labor Relations	5	144	2,7	4,0
8.	International Economics	8	144	2,7	4,0
9.	Statistics	3-4	144	2,7	4,0
10.	Sociology	3	144	2,7	4,0
11.	Regional Economics	5	144	2,7	4,0
12.	Safety	2	72	1,3	2,0
13.	Business analysis	6	144	2,7	4,0
14.	Financial Accounting I	5	144	2,7	4,0
15.	Financial Accounting II	6	144	2,7	4,0
16.	Management Accounting	8	144	2,7	4,0
17.	Reporting companies	7	144	2,7	4,0
18.	Accounting in Banks	8	144	2,7	4,0
19.	Accounting in Budgetary Institutions	6	144	2,7	4,0
20.	Information systems and technology in accounting and auditing	7	144	2,7	4,0
21.	Accounting in Taxation	7	144	2,7	4,0
22.	Audit	8	144	2,7	4,0
Total for the cycle			**3240**	**60,6**	**90,0**
23.	Practical training	6	360	6,7	10,0
Total for the cycle			**3600**	**67,3**	**100,0**
Regulatory part, total			**5724**	**106,0**	**159,0**
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1 Disciplines chosen by University					
2.1.1. Cycle of natural science (fundamental) training					
1.	Occupational Health	3	72	1,3	2,0
2.	jurisprudence	4	72	1,3	2,0
3.	Politics	6	108	2,0	3,0

4.	Psychology and Pedagogy	5	72	1,3	2,0
5.	University education	1	72	1,3	2,0
6.	Religion	3	72	1,3	2,0
7.	Sociology of work	4	108	2,0	3,0
8.	Family and domestic culture	5-6	72	1,3	2,0
9.	Social Communications	1	72	1,3	2,0
2.1.2. Cycle of professional and practical training					
1.	The technology of crop production	2	126	2,3	3,5
2.	Tech livestock production	2	162	3,0	4,5
3.	Agriculture is the basics of soil science and agricultural chemistry	1	108	2,0	3,0
4.	Technology of processing, storage and standardization of agricultural products	4	72	1,3	2,0
5.	Price and Pricing	7	72	1,3	2,0
6.	Basics of biotechnology	4	72	1,3	2,0
Chosen by university, total			***1332***	***24,7***	***37,0***
2.2. Disciplines chosen by students					
2.2.1. Cycle of professional and practical training					
1.	Organization and planning of agricultural production of agricultural units	7	108	2,0	3,0
2.	Economics of Agriculture	6	90	1,7	2,5
3.	The national economy	7	108	2,0	3,0
4.	Tax System	3	90	1,7	2,5
5.	Databases and DBMS	5	90	1,7	2,5
6.	environmental Economics	4	72	1,3	2,0
7.	Basics of stock	8	108	2,0	3,0
8.	Economics and Organization Ahroservis	5	72	1,3	2,0
9.	The economy of world agriculture	6	72	1,3	2,0
10.	Organization of agribusiness	8	72	1,3	2,0
11.	Production Management	8	72	1,3	2,0
12.	Finance Companies	6	108	2,0	3,0
13.	investment	8	72	1,3	2,0
14.	insurance	4	72	1,3	2,0
15.	Fundamentals of Agricultural Consulting	7	72	1,3	2,0
16.	Fundamentals of research methodology for Economic Research	8	72	1,3	2,0
17.	ARM accountant	6	90	1,7	2,5
18.	Accounting in Foreign Countries	8	72	1,3	2,0
19.	Accounting in sectors of the economy	7	72	1,3	2,0
Chosen by students, total			***1584***	***29,1***	***44,0***
Elective part, total			***2916***	***53,8***	***81,0***
Total, according to the field of study			**8640**	**160**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.
**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Annotations disciplines "Ukrainian language (for professional purposes)," "History of Ukraine", "The history of Ukrainian culture", "Foreign Language", "Philosophy", "Physical Education" see. Section 2.1.

1.2. Cycle of natural science (fundamental) training

Political Economy. Commodity production and business. Social reproduction and growth. Basic social forms of production and their evolution. World economy and the world market.

Microeconomics. Modern elements of microeconomic environment and their activities in a socially oriented market economy. Techniques and methods of economic decision-making at the micro level to the survival of businesses in today's economic environment functioning market economy.

Macroeconomics. Macroeconomic processes in the construction and development of market economy in Ukraine. Detection system, ways of solving problems on their achievements. Establishing relationships and determine the order of relationships between objects and subjects macroscopic environment. Addressing macroeconomic objectives.

History of Economics and Economic Thought. The economy and economic thought of primitive societies, the period of the day and early nineteenth century. The world economy and the main directions of economic thought of the XIX - XX centuries.

Higher mathematics. Elements of linear and vector algebra, analytical geometry. Mathematical analysis: a function, limit, continuity of functions, the derivative, the basic rules of differential equations, functions of one variable and study its numerical methods of differential functions of several variables.

Probability Theory and Mathematical Statistics. Events probable repetition of experiments, the laws of probability distribution, numerical characteristics of random variables and functions of random variables, limit theorems of probability theory, probability models of economic problems.

Optimization Methods and Models. Creating models of economic systems through a variety of economic-mathematical models and solving optimization problems to anticipate and manage the construction of modern agricultural enterprises. Methods of nonlinear programming, solving transportation problem, solving current economic problems of agricultural production.

Econometrics. Methods of estimation parameters dependencies (building models) that describe the quantitative relationships between economic variables. Using econometric models in economic research.

1.3. Cycle of professional and practical training

Business Economics. Economic mechanism of operation of the business, development and use of its resource potential in order to optimize economic performance.

Management. Theoretical Foundations of Management, the manager of the control system. Motivation and rules of managerial activities. The mechanism of control and responsibility in the management system.

Marketing. The nature, content and marketing his concept, the system and the characteristics of modern marketing and marketing policy: commodity, pricing, communication and distribution.

Money and Credit. The origin, nature and function of money and credit, Forms of money and credit relations, the structure of monetary and credit systems, the laws of money, the stability of financial systems and areas of improvement of monetary and credit relations in Ukraine, particularly in agriculture.

Finance. The essence of the types and functions of finance agriculture. Finance Companies, development and use of revenue, working capital, lending, financial support, playback of fixed assets, the financial performance of companies and their evaluation.

Accounting (general theory). Subject and method of accounting. Balance. Documentation as part of the method of accounting system accounts. Methodology Accounting business processes. Chart of Accounts. Registers and forms of accounting.

Labor Economics and Labor Relations. Examines the methodology and methods of analysis of internal labor market planning and analysis of employment performance in the enterprise, the acquisition of skills for solving practical problems of labor economics.

International Economics. Marketing in foreign trade. Export-import of raw materials, industrial and agricultural goods. The joint business activities. Methods of foreign trade. State regulation of foreign economic relations.

Statistics. Organization observations, reduction and analysis of data using statistical methods groupings, averages and indicators of variation, dispersion and correlation calculations, estimates time-spatial changes in mass public events.

Sociology. Sociological point. Formation of human behavior in the workplace activity and location in the process of motivation and the means of social control. The role of staff members and a small group in achieving production.

The regional economy. Scientific basis of productive forces and economic organization based on natural resources, scientific and technological progress. Features of the economy of certain regions of Ukraine.

Safety. Providing knowledge on maintaining efficiency and health in adverse environmental factors dwellings. Study of negative factors habitat and their impact on human life and health, practical skills of privacy protection in adverse situations. Human life is under the influence of negative factors of natural, technological, social, political and military.

Business analysis. Theoretical, methodological and organizational principles of business analysis economic actors. Analytical evaluation of business processes and their economic entity resources. Financial analysis of the economic performance of the economic entity.

Financial Accounting I. Study methods and conduct of the business accounting assets using advanced forms and national standards.

Financial Accounting II. Studying methods and management of the business accounting equity and liabilities using progressive forms and national standards.

Management Accounting. Study of the principles and techniques of management accounting, its place and role in the management of the company; necessary skills to apply appropriate methods and techniques in the process of cost accounting and calculation in order to make effective management decisions.

Reporting companies. General reporting requirements. Balance sheet. Income Statement. Statement of Cash Flows. Statement of changes in equity. Correction of errors and changes in the financial statements. Overall and consolidated reporting. The financial report of the small businesses. Tax reporting. Statistical and special reports.

Accounting for banks. General theoretical framework and principles of accounting, technical design and accounting software, accounting nomenclature and storage of accounting information, document management, accounting policy the bank account of the organization of basic banking transactions.

Accounting in public institutions. Fundamentals of Accounting in budget institutions. Revenue, expenses and payments. Accounting for non-current and current assets, equity.

Information systems and technology in accounting and auditing. Learning the basics of accounting science, of accounting problems, especially their use in solving various economic information processing technologies, acquiring skills to perform accounting standard setting tasks, to develop algorithms for their solution using database management systems and application packages.

Accounting for taxation purposes. Accounting and reporting procedure for income tax, VAT, excise tax, personal income, local taxes and fees, property and resource payments and the accounting and reporting for special tax treatment.

Auditing. Features of the elements of an organization registers synthetic and analytical accounting. Burned money, payments, inventory, fixed assets, intangible assets, remuneration systems, choices of production costs, determining the cost of production. Audit function: validation of the balance sheet and profit and loss account, the analysis of accounting, its compliance with the law, respect the rights of shareholders equity in the distribution of dividends and voting.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.2.1. Cycle of humanitarian, social and economic training

Occupational Health. Basic theory of safety. Occupational health and industrial hygiene. Safety of production processes. Explosion and fire safety. Electrical. Security for emergency response and disaster. Provide first aid to victims.

Jurisprudence. The legal status of various farms as agricultural producers. Legal regulation of intra-and inter-farm agricultural relations with logistics, ahroobsluhovuvannya. marketing of agricultural products.

Politics. Laws, structure and functions of political science. Power and power relations. The political system of society, the role and place in her state. Political consciousness and political culture. Politics and national relations. Politics and economics. National and state development of Ukraine.

Psychology and pedagogy. Developing the knowledge of the psyche of the individual as the highest value of society, understanding the nature of mechanisms of mental processes, states, personality traits as pillars of its formation in the process of education, training, and education. The acquisition of key terms and concepts of psychology and pedagogy at their reproduction and interpretation, gaining skills and basic skills to apply them in practice to improve competitiveness in social and professional syholohichniy area. The human psyche, of the formation of the individual in the process of education, training, and education.

University education. University education in the context of the Bologna process. Fundamentalization and individualization of training in higher education. The educational process at the university. Professional training in higher education: an introduction to the specialty. University Library and how to use its funds. Social and cultural infrastructure of the university. Student Government as an integral part demos ¬ ratyzatsiyi high school.

Religion. It is a comprehensive knowledge of the humanities, studying the patterns of occurrence, history and general characteristics of religious beliefs. Researching the socio-historical nature of religion, the mechanism of social ties with the spiritual, political and economic systems of society. Study subjects enables students to replace the natural religion conscious philosophy promotes ownership and achievements of world and national culture and a balanced attitude towards different religious beliefs.

Sociology of Labor. Essence, content, nature and function of labor. Formation of human behavior in the workplace activity. The role of staff members and a small group in achieving production. Optimization of socio-psychological climate in the collective.

Family and household culture. The aim of the course - students form a scientific understanding of the patterns of marital relations and family life in the modern world. The course includes scientific knowledge about the historical origins of the family, its functions, the evolution of family relationships, the modern problem of division of labor, leadership, marital compatibility.

Social Communication. Communication as a form of social activity, the condition of the individual. The art of communication as an organic quality professional business person. Nonverbal and verbal components of communication. Business contacts, their types and values. Methods of conducting interviews, public speaking, negotiation. Moral and ethical communication and principles of professional conduct business person.

2.1.2. Cycle of natural science (fundamental) training

The technology of crop production. Scientific bases of crop production. Modern agricultural technologies. Process map of growing agricultural crops ¬ cal. The concept of programmable growing crops.

Tech livestock production. The current state of animal husbandry. Forage. Impact of normalized feeding, breeding, methods accepted at the level of their performance. Milk, meat, eggs, wool, etc..

Agriculture is the basics of soil science and agricultural chemistry. Learn the laws of agriculture, plant life factors, methods of control, crop rotation, sowing crops, tillage and farming system.

Technology of processing, storage and standardization of agricultural products. Basics of post-harvest processing (cleaning, drying, ventilating, cooling), storage and processing. Manufacturing Flour. Methods for assessing the quality of commercial products and its compliance with generally accepted standards.

Price and pricing. Pricing theory, method of pricing. Marginal utility prices, methodological atypical pricing in an inflationary environment, ensuring equivalence of accounting and pricing in agriculture.

Fundamentals of biotechnology. Methods of recombinant DNA, the basic principles and techniques of plasmid recombinant proteins. The use of microbial systems in molecular diagnostics, microbiological production of vaccines and medicines, biodegradation of toxic compounds. Fundamentals of genetically engineered plants and animals, using modern genetic engineering techniques in medicine - stem cell technology.

2.2. Disciplines chosen by the students

2.2.1. Cycle of professional and practical training

Organization and planning of agricultural agricultural production units. Scientific basis for the organization, planning, production, utilization of productive capacities in various fields of agricultural enterprises and the organization of production and economic relations in the field of agriculture in a market economy.

Economy of Agriculture. The system of industrial relations in relation to the productive forces in agriculture. Ways and means of rational use of land, material and labor resources, intensification of agricultural production based on science and technology specialization, cooperation and integration of agricultural enterprises, the development of commodity-money relations, ways to improve production efficiency.

National economy. Theoretical and institutional framework regulating the national economy. Forecasting, programming and macroeconomic planning in the system of regulation of the national economy. The methods of state regulation of the economy.

The tax system. Study of theoretical and institutional framework of taxation, calculation methodology and procedure for payment of taxes and mandatory payments businesses and individuals.

Databases and System of Databases Management. The concept of databases, database management systems. Data models. Database objects: tables forms, queries, reports, macros, modules. Linking tables. Import and export data.

Economics. Interaction between environmental and economic factors, maintaining proper environmental quality, resource. Indicators of ecological, economic and social effectiveness of environmental **protection measures, changes in psychological conditions and socio-hygienic conditions.**

Fundamentals of exchange activities. Fundamentals of exchange activities. Commodity, stock, currency exchange. Exchange transaction, the order of execution and the mechanism of exchange trading.

Economics and Organization Ahroservis. Planning and organization of agricultural production service companies. The improvement of economic relations between production and service areas APC.

The economy of world agriculture. The current state of world agriculture. Economic system and the overall performance of countries, Ukraine's place in global agriculture. The world market for agricultural products.

Organization of agribusiness. Entrepreneurship and business in agriculture: the nature, objectives and benefits. Characteristics of entrepreneurs. Preparation of business plans.

Production Management. Consider the basic methodology for determining and evaluating agricultural production processes, their planning and optimization in order to justify economic decisions when planning for enterprise development.

Finance companies. Essence, types and functions of finance companies. The system of cashless and cash payments. Formation and use of gross and net income and earnings, working capital lending, financial support, playback of fixed assets.

Investing. Methodological foundations of investment. Forms, objects and areas of investment. Investment risks. Financial support for investment. Investment project budgeting and management of the investment process.

Insurance. Essence, the principles and the role of insurance. Classification of insurance, insurance risks and their assessment. Insurance market and its characteristics, insurance organization, state regulation of insurance. Personal insurance. Property insurance companies and individuals.

Fundamentals of Agricultural Consulting. Consulting (advisory) work as a management method and type of business. Exploring methods of working with farmers and rural population to perception, development and implementation of their innovations, using methods of mass dissemination, group and individual teaching methods and counseling, psychological and ethical aspects advisory.

Fundamentals of research methodology for Economic Research. Science and scientific research. The methodology of economic research. General methods of research. Special methods of economic research. Fundamentals of research in economics.

ARM accountant. Computer technology accounting in agricultural enterprises.

Accounting in foreign countries. The study of the theory and practice of financial and management accounting in foreign countries, developing necessary skills to use best practices in the field of accounting, analysis and control with regard to legislation

Accounting in sectors of the economy. Features and methods of accounting in trade, fiscal institutions and credit institutions and industry.

Bachelor
specialty in «MARKETING»
field of knowledge «Economics and Entrepreneurship»

Form of learning, licensed study amount:	
– full-time	60 persons
– extramural	60 persons
Term of study	4 years
Credits	240 ECTS
Language of instruction	Ukrainian
Qualfication of graduates	Bachelor in Marketing

The concept of training

The purpose of training of specialist in "Marketing" is to provide companies and organizations in the sphere of environmental management and agribusiness with highly skilled workers who would be able to operate information about the market situation and cfn use it to improve effectiveness of both entities and organs of state regulation and control. Qualifications of Bachelor of Marketing allows alumnus to identify the main directions of the market development quickly, to predict trends and develop adaptation measures for them.

Practical training

Future marketing experts having an example of real enterprises studies specific features of agricultural production, which will largely determine conduct of such products on the market. As potential leaders they learn to manage the departments of marketing, acquire knowledge of the practical aspects of the market work and understanding of their impact on the development of both the company and the market in general, to determine the place of professional marketer in the administrative and economic system of the state.

Academic rights of Bachelors – they can continue their studies in the Master Programme in specialties, features of which are laid in the curricula of bachelor programs, starting from the second or third courses of studing:

8.03050701 – «Marketingr»
or specialities in the field of 1801 «Specific categories»:
8.18010010 - «Quality, standartization and sertification»
8.18010018- «Management Business Administration»
8.18010020 - «Management of educational institution»
8.18010021 - «Pedagogy of high school»

Spheres of Bachelors employment

All graduates are employed in enterprises and organizations of the agricultural sector and public authorities at the following positions: heads of departments of Logistics (Deputy Head of External Cooperation, Deputy Head of Logistics), managers of small enterprises without the apparatus control in commercial service (Deputy of manager of agency: trade, advertising, etc.)., economist in pricing, economist in international trade, professional in the sphere of public services and marketing, specialist in the field of marketing, a specialist of department of public relations and media, Head of marketing department, Head of department of public relations and media, manager of a small enterprise without the administrative staff in wholesale and retail trade, manager of public relations, advertising manager.

Bachelors Program and Curriculum in Specialty “Marketing”

№	The name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training					
1	Ukrainian language (for professional purpose)	2	108	2,0	3,0
2	History of Ukraine	1	108	2,0	3,0
3	History of Ukrainian culture	1	108	2,0	3,0
4	Foreign language	1-7	504	9,3	14,0
5	Philosophy	2-3	216	4,0	6,0
6	Physical training	1-4	216	4,0	6,0
7	Sociology	3	108	2,0	3,0
8	Jurisprudence	4	108	2,0	3,0
9	Political Science	4	108	2,0	3,0
10	Psychology and Pedagogy	7	108	2,0	3,0
11	Basics of life safety	2	72	1,3	2,0
Total for the cycle			***1764***	***32,7***	***49,0***
1.2. Cycle of natural-scientific (fundamental) training					
1	Political Science	1-2	144	2,7	4,0
2	Mathematics for Economists	1-3	288	5,3	8,0
3	Economico-mathematical methods and models	5-6	180	3,3	5,0
4	Macroeconomics	4	108	2,0	3,0
5	History of Economy and Economical Science	1	108	2,0	3,0
6	Statistics	4-5	180	3,3	5,0
7	Regional Economics	5	144	2,7	4,0
8	Microeconomics	3	72	1,3	2,0
9	Economy of the Enterprise	5-6	180	3,3	5,0
10	Finance	7	144	2,7	4,0
11	Money and Credit	4	144	2,7	4,0
12	Management	5	144	2,7	4,0
13	Informatics	1-3	216	4,0	6,0
14	Accounting	4-5	180	3,3	5,0
15	National Economics	8	72	1,3	2,0
16	Marketing	4-5	360	6,7	10,0
17	Labour economics and Socio-labour Relations	4	144	2,7	4,0
18	International Economics	8	144	2,7	4,0
Total for the cycle			***2952***	***54,7***	***82,0***
1.3. Cycle of professional and practical training					
1	Marketing Product Policy	8	180	3,3	5,0
2	Infrastructure of Product Market	7	72	1,3	2,0
3	Logistics	6	180	3,3	5,0
4	Marketing of Industrial Enteprise	7	180	3,3	5,0
5	Marketing Price Policy	7	72	1,3	2,0
6	Marketing research	8	180	3,3	5,0
7	Marketing Communications	8	144	2,7	4,0
Total for the cycle			***1008***	***18,7***	***28,0***
Regulatory part, total			**5724**	**106,0**	**159,0**
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of natural-scientific (fundamental) training					
1	Technology of Crop Production	1-2	216	4,0	6,0
2	Technology of Livestock Production	2	144	2,7	4,0
3	Technology of Storage and Processing of Agricultural Products	3	72	1,3	2,0
4	Basics of Plant Protection and Agricultural Chemistry	3	72	1,3	2,0
5	Labour Protection	1	72	1,3	2,0

6	Culturology	1	72	1,3	2,0
2.1.2. Cycle of professional and practical training					
1	Agricultural Marketing	6	396	7,3	11,0
2	Consumer's Behaviour	6	180	3,3	5,0
3	Marketing Pricing	7	180	3,3	5,0
4	Investment	6	72	1,3	2,0
5	International Marketing	7	72	1,3	2,0
6	Commodity Studing	7	72	1,3	2,0
7	Organization of Enterprenerial Activities	6	72	1,3	2,0
8	Service Marketing	6	180	3,3	5,0
9	Environmental Economics	5	72	1,3	2,0
10	Biosocial Economics	6	72	1,3	2,0
11	Organization of Production	6	72	1,3	2,0
12	Economics of World Agriculture	5	72	1,3	2,0
13	Basics of Exchange Activities	8	108	2,0	3,0
Chosen by university, total			**22680**	**42,0**	**63,0**
2.2. Disciplines chosen by students					
2.2.1. Cycle of natural-scientific (fundamental) training					
1	Theory of Possibility and Mathematical Statistics	3	72	1,3	2,0
2	Social Communications	1-4	72	1,3	2,0
3	Standartization and Management of Production Quality	3	72	1,3	2,0
2.2.2. Cycle of professional and practical training					
1	Tax System	8	72	1,3	2,0
2	Risk-management	8	72	1,3	2,0
3	Economic Analysis	8	72	1,3	2,0
4	Operational Management	8	72	1,3	2,0
5	Public Relations	8	72	1,3	2,0
Chosen by students, total			**576**	**10,7**	**16,0**
Elective part, total			**2844**	**52,7**	**79,0**
Practical prepararion			**288**	**5,3**	**8,0**
Degree examination			**144**	**2,7**	**4,0**
Total, according to the field of study			**8640**	**160**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.
**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Annotations of disciplines «Ukrainian laguager (for professional direction)», «History of Ukraine», «History of Ukrainial culture», «Foreigh language», «Philosophy», «Physical Tarining» look in chapter 2.1.

Sociology. The purpose of the discipline is to familiarize students with the history of sociological thought and problematic field of Ukrainian and world sociology. The following learning assignments are subjected to achieve the purpose: to provide students with a holistic view of society, to form the skills for operating the theoretical and factual material, to help to understand the processes occurring in contemporary society in its various manifestations.

Jurisprudence. The purpose of teaching of educational discipline is training of specialists of management profile that will work under the edification of legal state and market economy. In professional terms learning of discipline is directed at legal regulation of the sphere of production relations. The future specialist must master the necessary minimum of legal knowledge as a prerequisite for successful production activities.

Political Science. The purpose of teaching is to form a holistic, logical, consistent system of knowledge about politics as a social occurrence and a social phenomenon. Tasks of the course are the following: to learn the basic concepts and categories of political science at reproduction and interpretation level for practical application and implementation in the future professional activity, to understand the nature of political phenomena and processes.

Psyhology and Pedagogy. The purpose of discipline is to study general principles and mechanisms of formation and development of cognitive mental processes, properties, states and formations. Task of the discipline is to form a system of theoretico-methodological knowledge of the problems of psychological science and practice, recognition of the structural elements of the mind - mental cognitive processes, properties, states and formations at reproduction and interpretation level for practical application and implementation in the process of professional activity of future specialists.

Basics of life safety. Purpose of the discipline is the acquisition of student competencies, knowledge, abilities and skills for professional activities for specialty considering the risk of occurrence of industrial accidents and natural hazards that can cause emergency situations and lead to adverse effects on the objects of management, as well as the formation of responsibility for personal and collective security for students.

1.2. Cycle of natural-scientific (fundamental) training

Political Science. The purpose of discipline is achievement of fundamental economic knowledge by fututre prospective specialists, formation of logic of economic thought and economic culture, teaching them basic methods of cognition and analysis of economic processes, and the ability to make reasonable decisions about economic issues related with their future practical activities.

Mathematics for economists. The purpose of discipline is to development of students' basic mathematical knowledge to solve problems in professional activities, analytical thinking skills and mathematical formulation of economic problems arising from the management. The tasks that need to be resolved during the process of studing the discipline are: acquation of knowledge of the main sections of higher mathematics, substantiation of basic theorems, formation of primary skills: performance of actions on vectors, matrices, calculations of determinants, solving systems of linear equations, studing of shapes and properties lines and planes, curves and surfaces of the second order, finding of the limits of step-exponential functions.

Economico-mathematical methods and models. This discipline teaches students to use methods of economic-mathematical models in their professional careers. The main directions of studing of the discipline are the following: mathematical model in the system of material and ideal models, the research of economic processes through mathematico-economic models, the main methods of modeling of economic processes, mathematical formalization of conditions with changable technical and economic factors, economico-mathematical analysis of optimal solutions.

Macroeconomics. The purpose of discipline is to train professionals to perform their professional functions, mastering of economic knowledge, which are based on the current macro-analysis, acquisition of skills of aggregate indicators of economic and social development of the national economy research through the use of universal instruments and macroeconomic modeling. As a result of the study of the course students should

know: patterns and general trends in development of economic processes at the macro level, allocate part macroeconomic aggregates and the links between them; methodological principles of calculation of macroeconomic indicators, forecasting ofmacroeconomic development and emergence of cycle and indicators of economic cycle;

History of Economics and Economical Sciences. This is a training course, during which students acquire historical and economic knowledge. Purpose of the discipline is: mastering theoretical knowledge of economic history at the micro, meso, macro and global levels, the formation of knowledge in comparative historico- economic analysis of models of the world economy development, exploring domestic and foreign economic experiences of past generations in different countries and different era. The subject of attention is the study of the process of formation, development and functioning of a market economy to understand the current practices of socio-economic transformation in Ukraine.

Statistics. Teaching of the discipline has an aim of the formation of future professionals of theoretical knowledge and practical skills in statistical estimation of economic phenomena and processes of social life, mastering the methods of the techniques of statistical analysis. The main tasks that need to be resolved in the process of teaching include: gathering, checking and evaluation of statistical information, development of statistical forms, bringing together and grouping of materials of statistical monitoring, identifying relationships between different phenomena and processes, establishing its structure, technics of calculation of generalized statistical indicators and their economic interpretation.

Regional Economics. The main objective of the course is the formation of students' modern thinking and special knowledge in branch of management at the regional level, the acquisition of skills and the formation of competencies required to perform the functions and realizations of powers of state and local governments. During the process of studing of the course the student has to learn the appropriate set of knowledge and skills that should contribute to the overall training of future specialists and ensure the proper execution of their assigned tasks in regional management.

Microeconomics. It is one of the components of modern economic theory – the fundamental science about household which explores human behavior and explains why and how they make certain economic decisions. Microeconomics studies the behavior of individual economic agents in different market structures. The object of study is the behavior of micro-economical entities, ie the process of developing, adopting and implementing decisions regarding the selection and use of scarce resources in order to obtain the greatest possible benefit.

Economics of the enterprise. It is the science of production efficiency, ways and means to achieve the best results at the lowest cost by enterprise. The subject of the study of economics of enterprise are methods and ways of combining rational and efficient use of all elements of the manufacturing process at the enterprise level. Target of the economics of enterprise: study measures to improve the efficiency of enterprises and the use of the means of production, and labor intensive study ways and environmentally sound development of enterprises, determination of the effectiveness of introduction of new machines and their systems, individual measures.

Finance. The purpose of discipline is to develop in students of modern economic thinking and system of specific knowledge about basic concepts regarding the economic and financial activity, contents of its specific

Money and Credit. The aim of the course is to develop in the future specialists in marketing a modern economic thought and knowledge system concerning general normflities of development of modern financial and monetary relations of society.

Management. The main purpose of teaching is to develop in future leaders a modern management thinking and system of special knowledge in branch of management, formation of understanding of the conceptual foundations of organizations' system management, acquirement of skills of analysing internal and external environment, making appropriate management decisions.

Informatics. The goal of teaching of the discipline is to develop in future professionals a current level of informational and computeral culture, the acquirement of practical skills of work on modern computer equipment and the usage of modern information technologies to solve various problems in the practice activity of the specialty.

Accounting. The main purpose of teaching future marketings is to build theoretical knowledge and acquirement of practical skills in organizing and prosecuting of accounting and leading the auditing of financial statements, as well as using of their results, as the informational base of effective decision-making. The main task of studing the discipline is detailed overall economic and accounting and auditing training of specialists and acquiring of principles, tools, methods and techniques of accounting of commercial enterprises, as well as the audit of the financial statements.

National economics. The purpose of the disciplineis building a holistic systematic view of the national economic system, structure of the organizational, methodological and regulatory activities of state and commercial structures in the branch of economics, the patterns and features of the functioning of the national economy compared to economies of other countries.

Marketing. The purpose of the discipline is the formation in students - future marketers a scientific outlook and special knowledge in the theory, methodology of marketing, development abilities and skills to perform management functions in the enterprise based on marketing for satisfaction of customer's needs and ensure the effective activities of the enterprise.

Labour economics and socio-labour relations. Studing the discipline involves consideration of the following issues: socio-economic role of labor in the development of society, the development and usage of human resources, theoretical and practical basis for the organization, regulation and remuneration. Considerable attention is paid to the study of issues of functioning the system of socio-labour relations, employment problems and social security of population, unemployment, activities of the International Labour Organisation and International Labour Migration, etc.

International economics. The purpose of teaching is to form a system of special knowledge of the problems and prospects of development of the international economic relations for the basic and special education and practice in the specialty. The result of studing the discipline is following: developing a holistic understanding of the processes that characterize the international level of interaction between national economies, mastering new approaches concerning the estimation of the evolutionary nature of the international economy development, mastering culture of modern economic thought.

1.3. Cycle of professional and practical training

Marketing product policy. The purpose of discipline is to learn the principles of comprehensive range of optimization and further development. Solving the above problems of marketing goods policy for future specialists may make the implementation of these tasks discipline involving the study: the quality of goods and services (works), the main market of the goods and services competitive products, the main areas of commercial policy formation.

The infrastructure of commodity market. The purpose of the following courses: to master the theory of commodity market infrastructure as an essential part of the market economy, the practical ability to control its activities to promote, storage and sale of goods and services to meet the needs of consumers, the ability to find and implement solutions for intensification and efficiency in this area. Objectives of the course: to know the nature of the commodity market infrastructure and its role in a market economy, the types and conditions of an effective infrastructure of individual links of the commodity market.

Logistics. The main purpose of teaching is to form future professionals of system knowledge and understanding of the conceptual foundations of logistics theory and practice of this trend and skills of independent work on learning about modern management techniques and other material flows in the modern world.

Marketing of industrial enterprises. The purpose of discipline is: the formation of theoretical and practical knowledge about industrial marketing, modern concepts of development, methodological and organizational framework for use. Objectives of the course: the study of the theory of industrial marketing, market research methodology, design and planning of marketing strategies and sales industry, mastering modern management marketing communication activities in the areas of procurement, sales distribution.

Marketing price policy. The purpose of the course is to learn the complex knowledge how to develop and implement marketing pricing, pricing on new and traditional products and services. The task of discipline: the study of marketing processes of pricing and skills of analysis, assimilation of pricing principles and marketing management, familiarization with the practical aspects of pricing in the company.

Marketing Research. The course "Marketing Research" forming students' understanding of marketing research as a science, an introduction to the history of the emergence of marketing and market research, is in the form of systematic data on the direction, organization and most important methods of marketing research in small and medium business. Important objectives of the course "Marketing research" are: developing knowledge about the nature of marketing research, study the importance of marketing research in a market economy, the definition of goals and objectives of marketing research.

Marketing Communications. The purpose of discipline: mastering the knowledge of effective goods / services to take effective industrial, institutional and scientific solutions to date. The target of courses: learning the basic categories of marketing communications, exploring techniques budgeting advertising campaigns algorithms calculate the efficiency of advertising appeal to the target audience and practical skills they use in promotion, finding stocks improving the promotion of goods.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.2.1. Cycle of natural science (fundamental) training

The technology of crop production. The main purpose of discipline is to provide knowledge to create optimal process (agro-ecological) conditions of the required number of high-quality crop production based on intensive photosynthesis in crops field crops while maintaining or improving soil fertility. The key taskof it is: getting practical skills in production high-quality, environmentally friendly products with minimal energy and labor costs while maximizing its output per unit time per unit area that requires large-scale introduction of high-grade, intensive, energy-saving and environmentally appropriate technologies.

The technology of livestock production. Scientific approaches and practical issues of discipline that anticipation for the study have immediate and direct relevance to future research or practice students. This applies both on scientific principles of economics and livestock industries, farms activities, planning and financing their technology of major livestock products, as well as a deep understanding and knowledge of them essentially biological properties of a living organism, patterns of development, the relationship of organism and environment and historical development of the organism. Also state animal that has emerged in Ukraine and introduction of new technologies livestock production requires the ability to assess the effectiveness of a particular technology based initiatives.

Technology of storage and processing of agricultural production. The purpose of discipline is giving future marketing specialists professional knowledge of the main characteristics of the product, from a stage production and finishing of pre-sale preparation. The discipline studies technological regulations that determine the quality of products and by its price parameters. Students acquire practical skills with the products, allowing their careers to forecast supply and demand for it.

Principles of crop protection chemistry. The purpose of discipline is to: equip future professional modern theoretical knowledge and practical skills on the protection of crops from pests and teach it based on the knowledge of science and best practices to implement in their own bio security, integrated systems of protection of crops and fruit trees in production under different forms of management based on species composition of harmful and useful fauna and flora, agro-climatic conditions of the area, and so on.

Labour protection. The purpose of discipline is to provide the knowledge, skills, and abilities (competencies) for effective professional by ensuring optimal safety management in enterprises (objects of economic, commercial, scientific and educational activities), the formation of students' responsibility for individual and collective security and awareness of the need for mandatory full implementation of all safety measures in the workplace.

Cultural Studies. The purpose of teaching - the formation of knowledge about patterns of national historic and cultural process, the main achievements of the national culture, the assimilation of human and national cultural values, enriching the spiritual world, the formation of moral and aesthetic needs and the ability to preserve and protect the cultural achievements of Ukraine.

2.1.2. Cycle of professional and practical training

Agricultural Marketing. The purpose of discipline is to provide students the theoretical knowledge and practical skills in management, planning and organization of marketing activities of companies in the market of agricultural products. The task is to discipline students acquiring skills in market research of agricultural products (APC), predicting conditions of trade, inventory management and quality of agricultural products, pricing, promotion of goods on the domestic and foreign markets of food, distribution and marketing of domestic products.

Consumer Behavior. The purpose of discipline is the acquisition of knowledge and practical skills regarding working with customers, managing their behavior, shaping and maintaining consumer demand for their products and services, identifying their customers and influence on the acceptance of their purchase decisions. Objective: To study the functional structure and data base management behavior of consumers. Subject: behavior of potential and actual customers, the factors that affect consumer behavior, models of consumer behavior.

Marketing pricing. The aim of the course is the development of theoretical and methodological foundations of marketing pricing, as well as acquiring some experience pricing products company. Training material based on the provisions of modern economic

theory, scientific research foreign scientists, laws and regulations in force in the Ukrainian economy. Learning discipline of educational material will increase the overall level of students and forming them practical skills in marketing pricing in market conditions.

Investing. The purpose of discipline is to develop in students of modern economic thinking and system expertise in the field of investment activity of enterprises, relevant competencies based on the assimilation of basic theoretical principles and mastering practical skills necessary to effectively carry out these activities in the enterprise.

International Marketing. The purpose of discipline - the formation of students' theoretical and practical knowledge in the sphere of international marketing activities needed to achieve business goals in international business. The object of discipline is a set of principles of integrated management system international marketing activities in the company and implementation of the basic functions of marketing in international business.

Commodity studying. The purpose of discipline - to give the future specialists theoretical background and practical skills of the fundamental characteristics of the product using knowledge gained in solving the major problems of marketing activities. Problems Subjects: to give the theoretical knowledge of fundamental characteristics that make the use-value of goods; train future professionals to the principles and methods of goods movement; systemating the explore of the multitude of products through the rational application of classification and coding.

Organization of business. This subject provides knowledge about the laws that govern the one hand, the economic property relations between entrepreneurs and employees, on the other - the actions of entrepreneurs in the process of selecting resources for production, exchange, distribution and consumption of goods and services.

Services Marketing. The purpose of discipline "services marketing " is to deepen students' knowledge on the specifics of marketing services as a specific commodity and conditions, mechanisms and tools for use in the activities of organizations (companies). Objectives of the course: understanding the significance of marketing in the service sector, its features, market research services, its structure in the world and national levels, regulation and regulatory support, marketing tools absorption features in the organization, and businesses in the service sector, the ability to use this knowledge in practice activity. The object of the course is the theory and practice of marketing in services.

Environmental Economics. Environmental Economics - interdisciplinary science study which aims to obtain and use new knowledge in the field of regulation of the relationship between socio-economic development of society and the environment through their organic unity and cooperation, as well as the formation of an economically efficient mechanism for maintaining ecological balance and sustainable use of natural resources . Need the discipline due to the fact that any measures in the agricultural sector should not only environmentally friendly but also cost effective and appropriate.

The organization of production. The aim of the course - to give future professionals and leaders of the agricultural sector agricultural research knowledge with efficient organization of agricultural production in a mixed economy and the development of market relations. Currently particularly important knowledge of organizational and economic, financial, legal and social foundations of new businesses, farming, farm economic relations in enterprises, which teaches this discipline.

The economy of world agriculture. The main goal of mastery of the course is a deep study of patterns of world agricultural equip future professionals systematized and generalized knowledge about agricultural economics of individual countries and regions in the context of global trends in agricultural production and international relations.

Fundamentals of exchange activities. This subject gives students an idea of the basic tools of the trade used in the global stock market. Future marketing professionals for example stock market learning process of birth for the goods and explore the factors that affect it.

2.2. Disciplines chosen by the students

2.2.1. Cycle of natural science (fundamental) training

Probability Theory and Mathematical Statistics. The main purpose of teaching is to form future professionals with basic knowledge the basis of a probabilistic-statistical machine to solve theoretical and practical economic problems. The main tasks that needs to be addressed in the process of teaching is to provide students with knowledge of basic definitions, theorems, rules, theorem proving, and the formation of skills: to fulfill qualitative and quantitative mathematical analysis of random events, random variables and systems of values, conduct mathematical treatment of statistical data provide statistical estimation of population parameters.

Social Communication. The main purpose of the discipline is to help the students in acquiring the necessary theoretical knowledge and practical skills in the field of social education, transformation of social knowledge, social and self-development to address contemporary social issues.

Standardization and quality control. In studying the discipline, students become acquainted with the basic principles of standardization of products, processes and services and basic concepts used for the certification of safety and quality in Ukraine and in the world, primarily in the European Union. The result of course is the ability to correctly assess the quality of specialist food and used in its production of raw materials and to determine the feasibility of acquiring it, and intended use.

2.2.2. Cycle of professional and practical training

The tax system. The purpose of the teaching of this discipline - the study of aggregate financial relations arising in the process of distribution and redistribution of gross domestic product from businesses and individuals to centralized funds, which is the theoretical basis of the discipline. In addition, considerable attention is paid to mastering practical principles of the tax system in Ukraine. This is the future professional to freely navigate in the tax area, objectively assess the changes occurring in tax policy, to understand the nature and trends in tax administration, develop and resolve issues of theory and practice of building the state tax system.

Risk Management. The purpose of teaching consists in providing knowledge about the methods of risk assessment parameters that characterize the quantitative relationships between economic variables. Challenges of teaching is learning predictive risk models, acquiring skills to use them in practice economic management. As a result, the study of the course students should know: the nature, subject and object of discipline, modeling of economic risk system of economic forecasting risks, the social risk prediction methods of technical analysis.

Economic Analysis. Academic discipline involves the examination of the theory of economic analysis, practical skills of analytical work, its information and software and developing abilities to use economic logic and economic-mathematical methods to the study of business economics. In the study subjects upcoming expert learns a technique of analysis at different levels of management to a comprehensive evaluation of the results of management, study and definition of internal resources management of material, financial and human resources for science-based decision-making.

Operations Management. The main purpose of teaching is to develop students' competence in relation to the basic principles, the basic categories of modern concepts, theoretical principles and practical methods of management of enterprises main business and skills development of operational strategy, creation and use of sectoral operational subsystems as the basis for achieving the organization's mission.

Bachelor
specialty in "MANAGEMENT"
field of knowledge "Management and Administration"

Form of learning, licensed study amount:	
– full-time	150 persons
– extramural	60 persons
Term of study	4 years
Credits	240 ECTS
Language of instruction	Ukrainian, English
Qualification of graduates	Bachelor in Management

The concept of training

The purpose of training as "Management" is to provide agribusiness companies and organizations highly skilled workers primary level management departments, operating systems and processes. Qualifications Bachelor of Management and Manager administrator can graduate quickly adapt to domestic economic relations of enterprises and organizations to quickly develop and implement the elements of the management system, establish an effective incentive system.

Practical training

Future management specialists of specific companies gain working knowledge of modern management methods, knowledge of the technological issues of enterprise's ability to govern themselves, to build a clear personal goals, ability to solve problems, the ability to innovate, and the ability to influence others, knowledge of modern management approaches, the ability to control, the ability to train and develop subordinates; manage enterprise knowledge of the practical aspects of decision-making.

Academic rights of Bachelors

Students can continue their studies in the Master Programmer in specialties signs which are placed in the curricula of undergraduate programs, beginning with the second or third courses:

8.03060101 - "Management of Business and Administration"

8.03060104 - " International Management " or field of knowledge 1801 "Specific categories":

8.18010010 – «Quality, standardization and certification"

8.18010018 – «Administrative Management"

8.18010020 – «Management of Educational Institutions"

8.18010021 – «The Pedagogy of Higher School"

Spheres of Bachelors employment

All graduates are employed in companies and organizations in the agricultural sector and public authorities at the following positions: managers of production units in commercial service, working apparatus of central government, workers, staff of local authorities, heads of other departments in other areas (Inspector, Deputy Chief department), managers of small enterprises without the apparatus (Vice Chairman), managers of business and management (personnel manager, manager of administration), managers in other sectors of economic activity, economists (economist contract work, Economic Advisory) assistant managers.

Bachelors Program and Curriculum in Specialty «Management»

№	The name of course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training *					
1	Philosophy	5	108	2,0	3,0
2	History of Ukraine	1	108	2,0	3,0
3	The history of Ukrainian culture	3	72	1,3	2,0
4	Ukrainian language (for professional purposes)	2	108	2,0	3,0
5	Foreign language (for professional purposes)	1-4	288	5,3	8,0
6	Psychology	7	72	1,3	2,0
7	Sociology	1	72	1,3	2,0
8	Political science	3	72	1,3	2,0
9	Physical Education **	1-4	216	4,0	6,0
Total for the cycle			***1116***	***20,7***	***31,0***
1.2. Cycle of natural science (fundamental) training					
1	Higher and Applied Mathematics	1-2	216	4,0	6,0
2	Statistics	4-5	162	3,0	4,5
3	Information Systems and Technology	3-4	108	2,0	3,0
4	Economics: Principles of Economic Theory	1-2	108	2,0	3,0
5	Economics: Macroeconomics	4	108	2,0	3,0
6	Economics: Microeconomics	3	108	2,0	3,0
Total for the cycle			***810***	***15***	***23,5***
1.3. Cycle of professional and practical training					
1	State and regional administration	6	108	2,0	3,0
2	Management and administration : theory of organization	5	108	2,0	3,0
3	Management and administration.: management	5	108	2,0	3,0
4	Management and administration.: Operations Management	7	144	2,7	4,0
5	Management and administration.: HR	8	144	2,7	4,0
6	Management and administration.: management	7	108	2,0	3,0
7	Management and administration.: Innovation Management	8	144	2,7	4,0
8	Management and administration.: Strategic management	8	108	2,0	3,0
9	Management and administration.: Administrative Management	6	108	2,0	3,0
10	Law: jurisprudence	5	108	2,0	3,0
11	Law: Administrative Law	8	108	2,0	3,0
12	Law: Employment Law	7	108	2,0	3,0
13	Law: Commercial Law	7	108	2,0	3,0
14	Finance, Money and Credit	5, 7	162	3,0	4,5
15	Economy and finances of enterprise.: economy of enterprise	5	108	2,0	3,0
16	Economy and finances of enterprise.: finances of enterprise	7	108	2,0	3,0
17	Accounting and Audit	4-5	162	3,0	4,5
18	Marketing	5	162	3,0	4,5
19	Logistics	6	108	2,0	3,0
20	Foreign economic activity of enterprise	7	108	2,0	3,0
21	International economic relations	8	108	2,0	3,0
22	Safety of vital functions	3	108	2,0	3,0
23	Basis of labor protection	3	108	2,0	3,0
Total for the cycle			***2538***	***47,0***	***76,5***
Regulatory part, total			**4464**	**82,7**	**124,0**

2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of natural science (fundamental) training					
1	Economic Informatics	1-3	252	4,7	7,0
2	Production technology for crop	1-2	144	2,7	4,0
3	Agricultural Machinery	2	108	2,0	3,0
4	Fundamentals of Plant Protection and Agricultural Chemistry	3	108	2,0	3,0
5	Technology of production of livestock products	2	108	2,0	3,0
6	Mechanization of livestock	2	108	2,0	3,0
7	Technology of storage and processing of agricultural products	3	108	2,0	3,0
8	Econometrics	6	108	2,0	3,0
9	Logic	6	108	2,0	3,0
10	Economic modeling	6	108	2,0	3,0
11	Analysis of operations	8	108	2,0	3,0
2.1.2. Cycle of professional and practical training					
1	Introduction to the profession	1	108	2,0	3,0
2	Management in agriculture	6	216	4,0	6,0
3	Economics of Agriculture	6	216	4,0	6,0
4	Organization of agricultural production	6	108	2,0	3,0
5	Basics of exchange activity	8	108	2,0	3,0
6	Basis of the agrarian consulting	8	108	2,0	3,0
7	Economy of world agriculture	7	108	2,0	3,0
8	Analysis of economic and commercial activity	8	108	2,0	3,0
9	Organization of entrepreneurial activity	6	108	2,0	3,0
10	National economy	6	72	1,3	2,0
11	Biosocial economy	6	72	1,3	2,0
Chosen by university, total			**2700**	**50,0**	**75,0**
2.2. Disciplines chosen by students					
2.2.1. Cycle of natural science (fundamental) training					
1	Social Communications	1-4	144	2,7	4,0
2	Applied Mathematics in management	2	108	2,0	3,0
3	Probability Theory and Mathematical Statistics	4	108	2,0	3,0
4	Mathematical Programming	4	108	2,0	3,0
5	Theory of the systems	5	108	2,0	3,0
2.2.2. Cycle of professional and practical training					
1	Economy of labor and social-labor relations	4	108	2,0	3,0
2	Controlling	7	108	2,0	3,0
3	Theory of economic analysis	7	108	2,0	3,0
4	Environmental economics	5	108	2,0	3,0
5	Risk Management	8	108	2,0	3,0
Chosen by students, total			**1116**	**20,7**	**31,0**
Elective part, total			**3816**	**70,7**	**106,0**
Practical training			**639**	**11,8**	**17,8**
Degree examination			**144**	**2,7**	**4,0**
Total, according to the field of study			**8640**	**160**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.

**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Annotations of disciplines are «Ukrainian (after professional direction)», «History of Ukraine», «History of the Ukrainian culture», «Foreign language», «Philosophy», «Physical education», see a section 2.1.

Psychology. The purpose of discipline is to explore the general principles and mechanisms of formation and development of cognitive mental processes, properties, states and communities. Task of the discipline is to form a system of theoretical and methodological knowledge of the problems of psychological science and practice, knowledge of the structural elements of the mind - mental cognitive processes, properties, classes and structures at play and interpretation for practical application and implementation in the professional activity of future specialists.

Sociology. The purpose of discipline is an acquaintance of students with history of sociological idea and problem field of Ukrainian and world sociology. Such educational tasks submit gaining end: to give students the integral picture of society; to form skills of operation theoretical and actual material; to help in understanding of processes which take place in modern society in his different displays.

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1.2. Cycle of natural science (fundamental) training

Higher and applied mathematics. The purpose of study of discipline is forming for the students of base mathematical knowledge for the decision of tasks in professional activity, abilities of analytical thought and mathematical formulation of economic tasks which arise up in the process of management. The tasks that need to be addressed in the study subjects, students are gaining knowledge of the main sections of higher mathematics, proving basic theorems forming primary skills: perform operations on vectors, matrices, computing determinants, solving systems of linear equations, the study of shapes and properties lines and planes, curves and surfaces of the second order, of the limits of step-exponential functions.

Statistics. Teaching discipline aims at the formation of future professionals of theoretical knowledge and practical skills in statistical estimation of economic phenomena and processes of social life, mastering the techniques of statistical analysis. The main tasks that need to be addressed in the process of teaching include: cleaning, inspection and evaluation of statistical data, development of statistical forms, construction materials and grouping of statistical monitoring, identifying relationships between different phenomena and processes, establishing its structure, generalized statistical computing machinery indicators (absolute, relative, middle) and their economic interpretation.

Information systems and technology. The purpose of teaching of discipline is forming for the future specialists of modern level of informative and computer culture, acquisition of practical skills of work on a modern computer technique and use of modern information technologies for the decision of various tasks in practical activity on specialty.

Economic theory. The purpose of study of discipline is a receipt by the future specialists of the detailed economic knowledge, forming for them of logic of economic thought and economic culture, studies of them, the base methods of cognition and analysis of economic processes, ability to accept the grounded decisions concerning economic problems, related with their future practical activity.

1.3. Cycle of professional and practical training

State and regional administration. A purpose of course is forming of knowledge in industry of management on national and regional levels; acquisition of abilities and forming of jurisdictions, necessary for implementation functions and realization of plenary powers of public and local self-government authorities.

Management and administration: theory of organization. The primary objective of teaching of discipline is forming modern, on the basis of approach of the systems, to the world view in relation to creation, functioning and evolution of organizations. Main tasks which must be the disciplines decided in the process of teaching is: providing of students knowledge is about a theory and practice of functioning of organizations in the changeable terms of modern market socio-economic environment, about adjusting of processes, which in them take place in relationship with an external environment and others like that.

Management and administration: management. The primary objective of teaching of discipline is forming for the future managers of modern administrative thought and system of the special knowledge in industry of management, forming of understanding of conceptual system government organizations bases; acquisition of abilities of analysis of internal and external environment, acceptance of adequate administrative decisions.

Management and administration: operating management. The primary objective of teaching of discipline is forming for the students of competence in relation to base principles, basic categories, modern conceptions, theoretical positions and practical methods of management of enterprises and abilities of development of operating strategy, creation and use of a particular branch operating subsystems basic activity, as basis of providing of achievement of mission of organization.

Management and administration: HR. The purpose of teaching of discipline is forming of complex of theoretical knowledge and practical skills in relation to forming and realization of skilled policy in modern organizations, rational selection of workers on positions and forming of effective labor collective, evaluation and development of workers, and also the purposeful use of their potential.

Management and administration: management. The purpose of study of discipline is a capture theoretical knowledge and practical skills on questions personality development of manager; forming for the students of individual features and behavioral skills which need a future leader; development for the future managers of abilities to organize the personal labor.

Management and administration: management innovations. The primary objective of teaching of discipline is a capture modern theoretical bases and practical skills of management of organization innovative activity. Basic tasks which must be the disciplines decided in the process of teaching is theoretical preparation of students and forming for them of skills in the field of management of organization innovative activity. The result of study of discipline is acquisition of the special professional jurisdictions from management innovations.

Management and administration: strategic management. The primary objective of teaching of discipline is a capture of strategic management modern theoretical bases and by practical skills of acceptance of strategic decisions in the process of management activity and development of enterprise at the market. Basic tasks which must be the

disciplines decided in the process of teaching is theoretical preparation of students and forming for them of skills in the field of strategic management an enterprise.

Management and administration: administrative management. The purpose of study of discipline is an increase of efficiency of management organizational structures due to the correct use by the managers of different levels of principles and instruments of administration, to creation of the integral system of administrative management organization.

Law: jurisprudence. A purpose of teaching of educational discipline is preparation of specialists of administrative type, which will work in the conditions of construction of the legal state and market economy. In the professional plan of study disciplines are directed on the legal adjusting in the field of production relations. A future specialist must capture necessary a minimum of legal knowledge as pre-conditions of successful production activity.

Law: administrative law. The purpose of study of educational discipline is a necessity of preparation of specialists management spheres which will work in the conditions of construction of the legal state and market economy; a study is bodies corporate and politic of laws, which regulates public relations and formed during providing of executive power of realization and defense of rights, freedoms and legal interests of physical and legal persons also in the process of state administration economic, socio-cultural and administratively political building in the state.

Law: Employment Law. The purpose of study of discipline consists in mastering of volume of knowledge which form legal thought students; acquisition of skills in relation to application of theoretical legal knowledge in practical administrative situations, and also skills of independent work, necessary for the subsequent deepening and timely update of professional manager's knowledge, forming of sense of justice and legal culture, for the future workers of business elite.

Law:Commercial Law. The purpose of discipline is forming for the students of the system of legal knowledge, integral associated with administrative activity; mastering of theoretical knowledge and practical skills, associated with the legal adjusting of economic activity, legal status of subjective manage and public authorities.

Finances, money and credit. The purpose of study of course is forming for future specialists on the management of modern economic thought and system of knowledge in relation to general conformities to law of development of modern financial and money-and-credit relations of society.

Economy and finances of enterprise. The purpose of study of discipline is forming for the students of modern economic thought and system of the special knowledge about base concepts in relation to economic-financial to activity of enterprise, maintenance of it, separate directions and them relationships systems of indexes, that it is characterized.

Account and audit. The primary objective of study of discipline future marketing specialists consists in forming of theoretical knowledge and acquisition of practical skills from organization and conduct of record-keeping and lead through of audit of the financial reporting, and also drawing on their results, as an informative base of acceptance of effective administrative decisions. By the basic task of study of discipline detailed general economic and public registration-accountant preparation of specialists and capture by them by principles, facilities, methods and receptions of account of activity of point-of-sale enterprises, and also to the audit them financial reporting.

Marketing. Purpose of study of discipline: students - future managers of scientific world view and special knowledge have forming from a theory, methodologies of marketing, making of abilities and skills of realization of administrative functions, on an enterprise on the basis of marketing for satisfaction of necessities of users and providing of effective activity of enterprise.

Logistic. The primary purpose of teaching of discipline is forming for the future specialists of system knowledge and understanding of conceptual bases of logistic, theory and practice of development of this direction and acquisition of skills of independent work, in relation to mastering of educational material in relation to the modern methods of management financial and other streams in modern terms.

Foreign economic activity of enterprise. The purpose of discipline is a receipt of system knowledge students from objective conformities to law, terms, processes and specific features of foreign economic activity (FEA) of enterprise, and also acquisition of skills, them the practical use..The result of study of discipline is forming for the students of integral imagination about processes in the field of FEA; capture of modern economic thought a culture, by methodological approaches in relation to an analysis and estimation of efficiency of foreign economic activity; forming for the students of abilities and practical skills of the use of the purchased knowledge is in practice of realization of foreign economic activity of enterprises in relation to application of empiric.

International economic relations. The purpose of teaching of discipline consists in forming for the future managers of the system of the special knowledge from problems and prospects of development of international economic relations for fundamental and special education and practical activity on specialty. The result of study of discipline is: forming of integral picture is of processes which characterize the international level of co-operation of national economies; a capture the newest approaches is in relation to the estimation of evolutional character of development of the system MEV; capture of modern economic thought a culture.

Safety of vital functions. The purpose of study of discipline consists in acquisition the student of jurisdictions, knowledge, abilities and skills, for realization of professional activity after specialty taking into account the risk of origin of technogenic failures and natural dangers, which can entail extraordinary situations and result in unfavorable consequences on an objects manage, and also forming for the students of responsibility, after to own and collective security.

Bases of labor protection. The purpose of study of discipline is a grant of knowledge, abilities, capabilities (jurisdictions), for realization of effective professional activity by providing of optimum management a labor protection on enterprises (objects economic, economic and scientifically educational to activity), forming for the students of responsibility after to own and collective security and awareness of necessity of mandatory implementation in full all measures of guaranteeing of safety of labor on workplaces.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.2.1. Cycle of natural science (fundamental) training

Economic Informatics. In the academic discipline covers the basic principles and methods of use of modern information technology. Discipline provides for the formation of knowledge of modern information technology makes it possible to acquire the skills to work on a personal computer with the operating system and basic software packages and systems. This in turn allows you to quickly and efficiently solve problems on the profile of the future profession.

The technology of crop production. The main purpose of discipline is to provide knowledge to create optimal process (agro-ecological) conditions of the required number of high-quality crop production based on intensive photosynthesis in crops field crops while maintaining or improving soil fertility. The key challenge is: getting practical skills to produce high-quality, environmentally friendly products with minimal energy and labor

costs while maximizing its output per unit time per unit area that requires large-scale introduction of high-grade, intensive, energy-saving and environmentally appropriate technologies.

Agricultural machines. The purpose of discipline - getting the students to provide in-depth knowledge of the purpose, structure, process and technology of adjustment to set the working conditions of agricultural machinery. As a result of the discipline the student should know: agronomic requirements for machines, purpose, structure, workflow Agricultural Machinery specialized harvesters and their regulation, methods of detection and elimination of major faults that occur during operation of agricultural machinery, rules maintenance of agricultural machinery , safety and fire prevention measures while working on farm machinery, specialized harvesters, grain cleaners and grain drying complex.

Principles of crop protection and chemistry. The purpose of discipline is to: equip future professional modern theoretical knowledge and practical skills on the protection of crops from pests and teach it based on the knowledge of science and best practices to implement in their own bio security, integrated systems of protection of crops and fruit trees in production under different forms of management based on species composition of harmful and useful fauna and flora, agro-climatic conditions of the area, and so on.

Technology of livestock production. Scientific approaches and practical issues of discipline that anticipation for the study have immediate and direct relevance to future research or practice students. This applies both on scientific principles of economics and livestock industries, farms activities, planning and financing their technology of major livestock products, as well as a deep understanding and knowledge of them essentially biological properties of a living organism, patterns of development, the relationship of organism and environment and historical development of the organism. Also state animal that has emerged in Ukraine and introduction of new technologies livestock production require future professionals the ability to evaluate the effectiveness of a particular technology based initiatives.

Mechanization of livestock. The system of training professional managers is to provide them with the necessary knowledge and skills with modern technology, mechanization and automation of animal production and methods of effective use of these tools in the workplace. In studying the discipline future specialist learns the principles of building technologies livestock production, the overall structure and working process of mechanization processes in animal acquires skills to justify the choice of specific production conditions, economic evaluation stages of analysis of the current situation and the development of new design solutions .

Technology of storage and processing of agricultural products. The purpose of discipline give future marketing specialists professional knowledge of the main characteristics of the product, from a stage production and finishing of pre-sale preparation. The discipline studying technological regulations that determine the quality of products and by its price parameters. Students acquire practical skills with the products, allowing their careers to forecast supply and demand for it.

Econometrics. Purpose of the discipline is to teach students how to quantify the relationship of economic indicators for various sets of economic information going into the last test of the appropriateness of certain prerequisites and to determine methods for quantitative measurement of links that are useful in each case according to the characteristics of economic information.

Logic. Discipline "Logic" and contributes to the improvement of crops logical thinking, rational and analytical approach to the analysis of various processes and phenomena. During the study, students gain knowledge of the basic laws of formal logic, forms of reasoning, research methods of modern logic and logical foundations of the

theory of argumentation skill and produce clear, consistent and consistently articulate their thoughts clearly and effectively draw conclusions.

Economic modeling. This discipline teaches students to use methods of economic-mathematical models in their careers. The main areas of the discipline are: mathematical model of the system of material and ideal models, the study of economic processes through mathematical economic models, the main methods of modeling of economic processes, mathematical formalization conditions with changing technical and economic factors, economic and mathematical analysis of optimal solutions.

Operations Research. Discipline, which is quite important methodological importance in the training of modern economics. It most clearly realized the basic ideas of mathematical disciplines studying the economic profession - the idea of mathematical modeling of economic processes that inform decisions taken as a result of managing organizational structures. The purpose and objectives of the course: get the theoretical knowledge and practical skills formalize control problems using specialized optimization techniques.

2.1.2. Cycle of professional and practical training

Introduction to profession. The purpose of discipline is to familiarize students with the features of future profession, its content and objectives of management, the role of managers at different levels in the management of modern enterprises, especially the training of specialists in management.

Management in agriculture. The goal of teaching "Management in agriculture" is to provide students with a comprehensive system of knowledge and skills to manage business processes in agricultural production systems, conditions for effectiveness of economic structures, diagnosis and management system design, adequate to the purposes and objectives of the market economy. Give students the theoretical knowledge and practical skills they study and justify specific proposals concerning topical issues of management in the agricultural sector, production in the agricultural enterprises, creating effective collective and individual farming, development of cadastre and land management.

Economy of Agriculture. Discipline examines key issues and patterns of development of agrarian sector of economy of Ukraine in a reform of land ownership and property. Describes the economic mechanism of the law of value in all sectors of agriculture. The measures improve the efficiency of agricultural production based on his cooperation, integration and intensification.

Organization of agricultural production. The aim of the course - to give future professionals and leaders of the agricultural sector agricultural research knowledge with efficient organization of agricultural production in a mixed economy and the development of market relations. Currently particularly important knowledge of organizational and economic, financial, legal and social foundations of new businesses, farming, farm economic relations in enterprises, which teaches this discipline.

Fundamentals of exchange activities. This subject gives students an idea of the basic tools of the trade used in the global stock market. Future marketing professionals for example stock market learning process of birth for the goods and explore the factors that affect it.

Fundamentals of Agricultural Consulting. The purpose of discipline is to develop initial knowledge from the experts about the basics of extension services, training methods and counseling agricultural producers, organizational structure and working methods of consulting and advisory services in the agricultural sector of Ukraine. As a result, the future of the discipline specialist learns about the nature of the place and role of extension services in the agricultural sector in different countries, the most effective methods of

disseminating information, psychological and ethical aspects of information and consultancy activities, modern information technology, especially the economic analysis and advice from the profile of the specialist.

The economy of world agriculture. The main goal of mastery of the course is a deep study of patterns of world agricultural equip future professionals systematized and generalized knowledge about agricultural economics of individual countries and regions in the context of global trends in agricultural production and international relations

Analysis of economic and commercial activities. Discipline is aimed at mastering the theoretical and practical knowledge of arranging and conducting business analysis of agricultural enterprises. In the study subjects upcoming expert learns a technique of analysis at different levels of management to a comprehensive evaluation of the results of management, study and definition of internal resources management of material, financial and human resources for science-based decision-making.

Organization of business. This subject provides knowledge about the laws that govern the one hand, the economic property relations between entrepreneurs and employees, on the other - the actions of entrepreneurs in the process of selecting resources for production, exchange, distribution and consumption of goods and services.

National economy. The purpose of discipline is to study the patterns and the functioning of the national economy compared to other economies. The objective of discipline is to outline the general and special in the national economic system, the identification of institutional factors and their impact on specific economic development, the functional role of the state in managing the economy and its integration into the world economy.

2.2. Disciplines chosen by the students

2.2.1. Cycle of natural science (fundamental) training

Social Communication. The main purpose of the discipline - the most help students in acquiring the necessary theoretical knowledge and practical skills in the field of social education, transformation of social knowledge, social and self-development to address contemporary social issues. As a result of studying the discipline, students will learn the basic concepts, principles, main categories, trends and patterns of social education for social learning and thus build constructive social dialogue.

Applied Mathematics in management. The purpose of discipline - to train future professionals have the basics of modern mathematical tools needed to analyze and solve practical problems, to promote students' skills of mathematical modeling and the use of mathematical methods for solving applied problems. As a result of the discipline the student must know the place and role of mathematical methods in solving applied problems.

Probability Theory and Mathematical Statistics. The main purpose of teaching is to form future professionals with basic knowledge the basis of a probabilistic-statistical machine to solve theoretical and practical economic problems. The main tasks that need to be addressed in the process of teaching is to provide students with knowledge of basic definitions, theorems, rules, theorem proving, and the formation of skills: to fulfill qualitative and quantitative mathematical analysis of random events, random variables and systems of values, giving statistical evaluation parameters the population.

Mathematical Programming. The main purpose of teaching is to develop future managers in skills creation of mathematical models, finding extreme of functions and functionals, using methods and optimization algorithms. The main tasks that need to be addressed in the process of teaching is to provide students with systematic knowledge of basic mathematical methods for solving optimization problems and the formation of skills:

formulation and formalization of economic and management problems; classify problems and methods of mathematical programming to solve linear followed.

Systems theory. The object of the course is the basic concepts of systems theory, methodology, systems analysis and decision theory methods in choosing the best option to overcome the problems that arose. Student on the basis of the discipline should know: the basic principles of a systematic approach to overcome the challenges that have arisen, the main principles of systems analysis of construction procedures to overcome the problems that arose, Principles of expertise in the construction of a mathematical model of the problem.

2.2.2. Cycle of professional and practical training

Labor Economics and Labor Relations. Learning discipline involves consideration of issues: social and economic role of labor in the development of society, the development and use of human resources, theoretical and practical basis for the organization, regulation and remuneration.

Controlling. Discipline implies that the purpose of the enterprise, the current collection and processing of information for management decision making, executing control deviation evidence from the plan and, most importantly, prepare recommendations for management decisions. Controlling aimed at improving the management and efficiency of economic management at the micro level.

Theory of Economic Analysis. Academic discipline involves the examination of the theory of economic analysis, practical skills of analytical work, its information and software and developing abilities to use economic logic and economic-mathematical methods to the study of business economics. In the study subjects upcoming expert learns a technique of analysis at different levels of management to a comprehensive evaluation of the results of management, study and definition of internal resources management of material, financial and human resources for science-based decision-making.

Environmental Economics. Environmental Economics - interdisciplinary science study which aims to obtain and use new knowledge in the field of regulation of the relationship between socio-economic development of society and the environment through their organic unity and cooperation, as well as the formation of an economically efficient mechanism for maintaining ecological balance and sustainable use of natural resources . Need the discipline due to the fact that any measures in the agricultural sector should not only environmentally friendly but also cost effective and appropriate.

Risk Management. The purpose of teaching - providing knowledge about the methods of risk assessment parameters that characterize the quantitative relationships between economic variables. Challenges of teaching - learning predictive risk models, acquiring skills to use them in practice economic management. As a result, the study of the course students should know: the nature, subject and object of discipline, modeling of economic risk system of economic forecasting risks, the social risk prediction methods of technical analysis.

2.11. UKRAINIAN EDUCATION AND RESEARCH INSTITUTE OF INFORMATION AND TELECOMMUNICATION SUPPORT OF AGROINDUSTRIAL AND ENVIRONMENT PROTECTION BRANCHES OF ECONOMY

Director – Ph.D. in technical sciences, associate professor,
Oleksii Tkachenko

Tel.: (044) 527-87-25, E-mail: it_nni_director@twin.nauu.kiev.ua
Location: Educational building 15, room 221

FACULTY OF COMPUTER SCIENCES AND ECONOMIC CYBERNETICS

Dean – Ph.D. in Pedagogics, associate professor,
Olena Glazunova

Tel.: (044) 527-83-51, E-mail: o-glazunova@nubip.edu.ua
Location: Educational building 15, room 212

The faculty organizes and coordinates the educational process of bachelors in specialty:

6.050101 − «Computer sciences»

Departments in charge of training graduates:
Programming Technologies
Tel.: (044) 527-87-23, E-mail: iusprog@nubip.edu.ua
Head of department – Ds.Sc. in information technologies, professor,
Andrii Shelestov

Computer Networks and Telecommunications
Tel.: (044) 527-81-99, E-mail: kmt_chair@ukr.net
Head of department – Ds.Sc. in telecommunications, professor,
Valerii Koval

6.030502 − «Economic Cybernetics»

Departments in charge of training graduates:
Economic Cybernetics
Tel.: (044) 527-85-67, E-mail: ciber_chair@twin.nauu.kiev.ua
Head of department – Ds.Sc. in Economics, professor,
Andrii Skrypnyk

Information systems
Tel.: (044) 527-86-07, E-mail: systems_chair@twin.nauu.kiev.ua
Head of the department – Ph.D. in Economics, professor,
Mykhailo Shvydenko

Bachelor
in specialty «COMPUTER SCIENCES»
field of knowledge» Informatics and Computation Technics »

Learning form, licensed volume:	
– full-time	50 persons
– correspondence	50 persons
Training term	4 years
Credits	240 ECTS
Language	Ukrainian
Qualification	Bachelor specialist in Information Technology

The concept of training

Training course "Computer Science" provides students with algorithmic thinking, methods of software engineering for implementing software to meet the requirements for quality, reliability and production characteristics

Practical training

Practical training of students of this field of study is aimed at mastering the basic techniques and technologies of information systems development.

Proposed Topics for Bachelor theses

1. Creation of authorization subsystem for the E-commerce systems
2. Development and implementation of communication protocols between the industrial computer and interfacing control system modes in the poultry house
3. Development of a conceptual model database of the automated control system for power consumption
4. Development of a conceptual database model of information system of the agricultural enterprise
5. Development of intelligent system for determining reagent dose at the flotation of water.

Academic rights of the Bachelors – graduates can continue their studies under the Master Program in specialties features of which are placed in the curricula of Bachelor programs, beginning from the second or third courses:

8.05010101 «Information Control Systems and Technologies»
or field of knowledge 1801 “Specific categories”:
8.18010010 – «Quality, standardization and certification»
8.18010018– «Administrative Management»
8.18010020 – «Management of the institution»
8.18010021 – «Pedagogy of the High School»

Spheres of Bachelors employment

Graduates of the "Computer Science" specialty can work as: software engineer, administrator of local and corporate networks, expert in the design and development of information and automated systems, artificial intelligence and expert systems, expert in Web-design and more.

Bachelors Program and Curriculum in Specialty "Computer Sciences"

№	The name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training*					
1	History of Ukraine	1	108	2,0	3,0
2	Ukrainian language for professional purpose	1	108	2,0	3,0
3	History of Ukrainian culture	2	72	1,3	2,0
4	Philosophy	4	108	2,0	3,0
5	Foreign language	1-4	180	3,3	5,0
6	Physical education	1-4	216	4,0	6,0
Total for the cycle			**792**	***14,6***	***16,0***
1.2. Cycle of natural science (fundamental) training*					
1	Higher Mathematics	1-3	540	10,0	15,0
2	Physics	1-2	216	4,0	6,0
3	Numerical methods	3	126	2,3	3,5
4	Discrete Mathematics	2-3	216	4,0	6,0
5	Theory of probability, probabilistic processes and mathematical statistics	4	162	3,0	4,5
6	Theory of algorithms	4	126	2,3	3,5
7	Decision making theory	7	144	2,7	4,0
8	Ecology	6	54	1,0	1,5
9	Mathematical Methods of Operations Research	5-6	144	2,7	4,0
Total for the cycle			**1728**	**32,0**	**48,0**
1.3. Cycle of professional and practical training *					
1	Electrical Engineering and Electronics	2	108	2,0	3,0
2	Computer circuitry and computer architecture	2-3	162	3,0	4,5
3	Computer Graphics	3	90	1,7	2,5
4	Algorithmic and Programming	1	180	3,3	5,0
5	Technology of the software products creation	4-5	144	2,7	4,0
6	Organization of data bases and knowledge	3	180	3,3	5,0
7	System Analysis	6	144	2,7	4,0
8	Computer Networks	6	180	3,3	5,0
9	Methods and artificial intelligence systems	6	144	2,7	4,0
10	System's modelling	4-5	144	2,7	4,0
11	Object-Oriented Programming	3	198	3,7	5,5
12	Economics and Business	6	108	2,0	3,0
13	Design of Information Systems	7	144	2,7	4,0
14	Basics of labor protection	8	54	1,0	1,5
15	Vital activity security	6	72	1,3	2,0
16	IT Project Management	5	144	2,7	4,0
17	Operating Systems	6	144	2,7	4,0
18	WEB-technology and WEB-design	8	180	3,3	5,0
19	Cross-platform programming	7	144	2,7	4,0
20	Technology of information protection	8	144	2,7	4,
21	Technology of distribution systems and parallel algorithms	5	216	4,0	6,0
22	Technology of Computer Design	8	144	2,7	4,0
23	Intellectual data analysis	7	126	2,3	3,5
24	Design and technological practice	2,4,6	306	5,7	8,5
25	Pre-diploma practice	8	162	3,0	4,5
26	Diploma project	8	180	3,3	5,0
Total for the cycle			**3942**	**73,0**	**109,5**
Regulatory part, total			**6462**	**119,7**	**173,5**

2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.2. Cycle of natural science (fundamental) training*					
2	Information theory	4	108	2,0	3,0
2.1.3. Cycle of professional and practical training*					
1	Typical technological objects, technologies and processes of the agriculture production	1	90	1,7	2,5
2	Technological means of information transmission	5	144	2,7	4,0
3	Intelligent Systems	8	144	2,7	4,0
4	Information control systems and technologies of agriculture	7-8	180	3,3	5,0
5	Modern management theory	7-8	180	3,3	5,0
6	Systems and Technology of the Database Management	4	144	2,7	4,0
7	Electrified technology in agricultural production	3	108	2,0	3,0
8	Information Technology	1-2	144	2,7	4,0
9	Methods and Tools for Computer Information Technology	3	144	2,7	4,0
10	Introduction to the profession	1	72	1,3	2,0
Chosen by university, total			**1458**	**27,1**	**40,5**
2.2. Disciplines chosen by students					
2.2.1. Cycle of humanitarian, social and economic training*					
1	Psychology	6	72	1,3	2,0
2	Economic theory	5	72	1,3	2,0
3	Political science	6	72	1,3	2,0
4	Law	7	72	1,3	2,0
5	Management	5	72	1,3	2,0
2.2.3. Cycle of professional and practical training *					
1	Microprocessor control systems	7	180	3,3	5,0
2	Multimedia in Information Technology	8	180	3,3	5,0
3	Theory of pattern recognition and classification in artificial intelligence systems	8	144	2,7	4,0
4	Statistical methods, theory of flow, events	7	144	2,7	4,0
Chosen by students, total			**936**	**18,0**	**26,0**
Elective part, total			**2394**	**44,3**	**66,5**
Practical training			**648**	**12,0**	**18,0**
Degree examination			**180**	**3,3**	**5,0**
Total, according to the field of study			**8640**	**160**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.

**Physical training is included into curriculum (30 h), but is not credited.

Annotation of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Annotations to the disciplines " The Ukrainian language" (for professional purposes), "History of Ukraine", "The history of Ukrainian culture", "Foreign Language", "Philosophy", "Physical Education" see. Section 2.1.

1.2. Cycle of natural science (fundamental) training

Higher mathematics. Complex numbers. Elementary functions. Continuity of functions. Derivative and differential functions. The study of functions, building graphs. The original, indefinite integral. Definite integral. Functions of several variables. Extremum functions necessary and sufficient conditions. Multiple and curvilinear integrals. Numerical, functional, degree Fourier series. Differential Equations. Linear algebra and analytic geometry.

Discrete Mathematics. The theory of sets and relations. Combinatorial analysis. Mathematical logic. Logic of statements. Predicate logic. Graph Theory. Trees. Fundamentals of coding theory. The theory of formal grammars. The theory of finite automata.

Probability theory, probabilistic processes and mathematical statistics. Probabilistic measures. Discrete and continuous random variables and their distribution laws. Multivariate random variables and their distribution. Expectation, variance, covariance, correlation coefficient. The law of large numbers, central limit theorem. Fundamentals of mathematical statistics. Testing statistical hypotheses and statistical parameter estimation. Statistical analysis of the relationship. Statistical analysis of the environmental, economic and social processes. Markov chains, processes, flow of events. Markov queuing system type. Random processes, random sequence.

The theory of algorithms. Mathematical Foundations of analysis algorithms. Algorithmic strategies. Basic theory of computability. Complexity classes P and NP. Algorithms for sorting, merging and searching. Combinatorial, recursive, geometric, cryptographic algorithms and heuristics. Fundamental algorithms on graphs and trees.

Numerical Methods. Direct methods for solving systems of linear equations. Solving systems of linear equations of large dimension. Numerical methods for solving nonlinear equations. Calculate the eigen values and eigen vectors of the matrix. Numerical differentiation and integration of functions. Solution of the Koshi problem for ordinary differential equations. Many stepping methods for solving differential equations. Implicit methods for solving hard problems. Boundary-value problems for ordinary differential equations. Integral Equations. Solving partial differential equations methods grids, finite elements, direct and iterative. Difference methods for solving parabolic equations. Methods for solving hyperbolic and elliptic equations.

Mathematical Methods of Operations Research. Construction of mathematical models of problem situations. Linear and nonlinear, discrete and stochastic programming. Duality. Post optimal analysis. Parametric programming. Principles of discrete programming. Methods of ZCLP solution. The method of branch and bound. Dynamic programming. Stochastic Programming. Optimization methods: features that differentiated functions matched are not differentiated in high dimensional problems. Objectives and methods of multicriteria optimization.

Decisions making theory. General aspects of decision making. Binary relations and decision-making. Attitude and expert evaluation. Models and methods of decision-making under conditions multi criteria. Decision making by analytical hierarchy. The concept of utility and rational choice. Models and methods of decision-making under fuzzy information, uncertainty and risk. Models and methods of multi personal decisions. Game theory, strategic and statistical game. Psycholinguistic aspects of decision making.

Physics. Kinematics. Dynamics. Conservation laws. Thermodynamics. The ideal gas. Statistical distributions. Real gas. Phase equilibrium. Static electric field. An electric current. Static magnetic field. Electromagnetic waves. Dynamic electromagnetic field. Maxwell's equations. Mechanical and electromagnetic waves. Mechanical and electromagnetic waves. Optics. The basic principles of quantum physics. Quantum theory of atoms.

Ecology. The laws of ecology. Environmental factors and their impact on the environment. Areas of environmental protection and environmental management. Methods to reduce the impact of environmental factors.

1.3. Cycle of professional and practical training

Algorithmic and programming. The concept of the algorithm and model algorithmic structure programming. Elements of algorithmic languages: the concept of data types, names, values, indexes, variables, constants, operations, expressions. Structured programming: sequence, branching and loops. Procedure-oriented programming. Recursion. Software development methodologies: top-down and bottom-up design, modular programming. Organization of data arrays, strings, structures and algorithms for their processing. File data structure. Dynamic data structures lists, queues, stacks, binary trees and algorithms for their processing. Algorithmic common computing tasks.

Object-oriented programming. The concept of object-oriented analysis, design and programming. The object model of the objective environment, the principles of its construction. The concept of objects and classes and their relationships. Fundamentals of object-oriented design language UML. Fundamentals of object-oriented programming language. Data Abstraction and Encapsulation. Constructors, destructors classes. Transshipment of operations and functions. Static constant class members, friendly features and classes. Composition and collection facilities. Simple and multiple inheritance. Implementation of polymorphism. Patterns of functions and classes. Handling of exceptional situations. Classes of input and output streams. The standard class library media program developer. Class library of functionality of Windows. Development of graphical user interfaces. Basic programming, event-driven. Development of DLL-libraries.

Operating systems. Basic concepts, evolution, variety of operating systems. Architecture and operating system resources. Planning and management of processes and threads. Multitasking, the interaction of flows, inter processor interaction. Manage RAM. The organization of memory in protected mode, control memory allocation. The logical and physical organization of file systems. Implementing file systems. Executable files. Manage O devices. Network tools Operating Systems. Interaction with the user in operating systems. Protection in operating systems. Download and administration of operating systems. Multiprocessor and distributed system.

Organization of data bases and knowledge. Database system. Concepts and architecture. Data models. A relational data model. Normalization theory of relational data model. Query languages: SQL and QBE. Database Design. Data integrity. Protection of databases. Navigation data processing. Databases: distributed, parallel, deductive, object-oriented, the Internet. Knowledge Base.

Intellectual data analysis. Methods of initial data. Methods of data structure: visualization and automatic grouping of data. Correlation and regression analysis. Multiple regression analysis. Multiple linear regression model. Checking the adequacy of the model. Nonlinear parameter estimation. Cluster analysis. Hierarchical clustering and sections. Clustering methods: McKin procedure, the method k-method, mesh method. Raster clustering objects. Linear discriminate analysis. Construction of canonical and classification functions. Decision tree. Support vector machine, "nearest neighbor" Bayes. Analysis of multidimensional groups. Statistical analysis of time series and forecasting. Classification of unknown objects in case of distributed data. Methods of estimation errors of classification. Search Methods Templates available. Methods stages, tasks Data Mining. Implementation of Data Mining, OLAP and data warehousing in the DSS. Processes, standards, tools, Data Mining.

Web technology and web design. The structure and principles of the Web. Launching client-server technology Web. Protocol HTTP. Custom scripts and applications. Server-side Web applications. JavaScript. Languages Development Scripting Perl, PHP, JSP. Developing applications for CGI-Perl, PHP, JSP. Basics of web applications using PHP. Interfaces Web applications interact with the DBMS. Web services and their description languages. Based on XML. Web content. CMS / CMF. Technology AJAX. Web Design.

Cross-platform programming. Definition and properties of the components. Interface specification as a contract. The model links. Strategies for software integration. Design and assembly of components. Marshaling. The distributed architecture of component systems. Component-oriented design. The formal design methods and visual components. Object request brokers. Transaction processing monitors. Features Component Technologies: COM / DCOM / NET, CORBA, Java Beans.

Technology of the software products creation. The concept of software development and the problems of complex software. The life cycle and software development processes. International and national standards for developing complex software products. Software development methodologies RUP, MSF, XP, DSDM, RAD. Software architecture, standards describing software architectures. Software design patterns. Automation software development. Software quality metrics, software quality standards. Verification, validation and testing. Standards for testing. Testing and maintenance of software products. Documenting and marketing software.

Computer Graphics. Raster and vector graphics. Modern graphics system. Use of graphics API. Fundamental techniques in graphics. Two-dimensional and three-dimensional clipping. Algorithms for generating lines. The use of coordinate transformations. Basic theory of transformations Euclidean and affine transformation. Simple color model. The parallel and central projection. Approximation of spline curves and surfaces. Fractal curves and surfaces. Polygonal representation of three-dimensional objects. Visualization and Computer Animation.

Technology computer design. Basic concepts and methodology for the design of complex objects and systems. Systemic structural level computer-aided design of complex objects. Mathematical models of design objects. CAD and CALS-technologies. CASE-technology. Analysis, verification and optimization of design solutions by means of CAD.

System analysis. Building system models of problem situations. Concepts and patterns of system analysis. Methods of system analysis. System analysis Business process objects computerization. Disclosure of the uncertainties in system analysis problems. Objectives and methods of system analysis multivariate risks. System management of complex objects. Standards documentation system solutions.

Technology protection. Methods and devices of protection and security. Security, access and authentication. Models defense. Memory protection. Data encryption. The main directions of modern cryptography. Mechanisms and protocols in PKI Key Management Information System. The main types of attacks, the principles of cryptanalysis. Basics of cryptography. Algorithms of secret and public keys. Authentication protocol. Digital Signatures. Use passwords and access control mechanisms. Questions Security and Firewalls.

Technology of distributed systems and parallel algorithms. How Grid and Web technologies. Soft Grid-of PHZ. Organize and manage resource allocation WSRF, GRAM, CONDOR. Grid and database. Management of Grid-environments. Security file system. Public key certificate. Grid-portal for user access to resources and applications Grid. The organization of parallel computing using existing technologies PVM, MPI. Parallel computing methods. Building a parallel computer systems Conveyor matrix, multiprocessor. Construction of cluster systems. Support Tools Parallel Computing PVM, MPI. Models RPC and remote application of RMI.

Systems modelling. Models of queuing systems. Petri nets. Probabilistic modeling. Simulation. Software simulation. Planning and conducting experiments with models. Action on the simulation results. Simulation and industrial computer systems.

IT project management. Basic concepts and methodology for managing IT projects. The life cycle of the product. Requirements management, organization design and resource management, quality, cost and risk of the project. Project Planning. Procedures and project management system. Methodology for functional simulation IDEF0. The methodology describing business processes IDEF3. Models project teams: MSF Microsoft, RUP IBM, CDM Oracle PMI-PMBoK.

Designing information systems. Approaches, principles and technologies of design IP. System and inductive approaches to IC design. Data models, process models and their design using Erwin. Standard UML: static and dynamic diagrams. Create reports using RPTSvin. Designing interfaces of information systems. RAD-methodology and CASE-technology creation and maintenance of IP. Technology RUP. Technology ARIS. Pahhern technology. Reengineering IP.

Methods and artificial intelligence systems. The concept of artificial intelligence. The concept of smart and intelligent problem IS FROM. Methods submission intellectual tasks and methods of finding solutions. Knowledge and knowledge representation model in SSHI. Semantic Grid SS: basic concepts, types, methods, and describe a logical conclusion to the SS. Frames: basic concepts, structure frame. Frame system. Expert Systems EC: purpose and principles of the generalized architecture, classes of problems that are solved by EC. Modern software and tools create SSHI: Visual Prolog. Allegro CLOS, CLIPS, JESS. Languages functional and logic programming.

Electrical engineering and electronics. Basic concepts and laws of electric and magnetic circuits. DC circuit. Circuit of single-phase sinusoidal current. Transients in RLC-circuits. Operator method for calculating transients. Semiconductor referrals and contacts. Transistors. IC. Rectifiers and converters. Amplifiers and generators. Discrete electronic devices.

Computer circuitry and computer architecture. Method of image information. Logical foundations of building elements. Circuitry combinational nodes. Digital circuitry and service elements of digital and analog components. Power sources. Circuitry combinatorial nodes. Digital computers. Memory. Processors. Supercomputers. Parallel computing systems. Universal microprocessors. MP support schemes on the system board. Structures of microprocessor systems. RISC-processors.

Computer networks. General principles of the structure of computer networks. Local network. Network architectural solutions. Minutes of the lower level of large networks. General questions of network design. Minutes of medium and high level networking. Controls networks.

Labor protection and Life safety. Actions in emergencies in peacetime and wartime. Methods of protection against damaging factors accidents, natural disasters and modern weapons of mass destruction. Methods of predicting the possible radiological, chemical, bacteriological, biological situation arising in the event of a disaster or accident. Hygiene regulations and modes of work. Fundamentals of health and safety.

Economics and Business. Business Economics. The general management functions and management techniques. Marketing: The marketing system in the enterprise, methods of market research, marketing planning. Strategic management: model, strategy, technology, strategic planning PEST. SWOT. BCG. SNW and others. Financial Management. Business planning: developing a business plan, sources of investment. Accounting and taxation burned. Management Accounting. Management. Prediction of the company. Marketing. Sales management and resources. Logistics. Budgeting and controlling. Management.

2. Elective academic disciplines

2.1. Disciplines chosen by University

Typical technological objects, processes and technology in agricultural production. Products of farm animals. Technology of production of livestock. Technology of production of pork. Technology of production of poultry, sheep and other livestock industries. Tech receiving, preprocessing, processing and storage of agricultural household animals.

Information Theory. Message and alarm. Stages of traffic information. Groups and sources of messages. Quantifying information. Entropy. Information characteristics of the signal source and channel information. Signals. Classification, basic definitions. Converting continuous to discrete signals. Encoding information.

Technical communication tools. Overview of telecommunications. Generalized system of digital communication systems. Messages signals, noise, and their mathematical models. Mathematical models of channels. Fundamentals of information theory. Methods and tools for encoding messages. Sending messages in digital systems. Security of modern telecommunications systems. Principles of multi-channel communication and their implementation in analog and digital systems. The efficiency of telecommunications. Elements of SEZ Design.

Intelligent systems. Neural networks Hopflid. Hamming neural network. Neural network adaptive resonance theory. Fuzzy sets and fuzzy neural network. Basic concepts of neural networks. Properties of neural networks learning process. Rosenblatt perceptron. Counter-propagation neural network.

Information control systems and technologies of agriculture. Definition and classification of information systems. Models of information systems. Basic concepts of information management information systems. Data Modeling. Models databases. Constructing information systems based on distributed databases. Overview architecture of complex information systems. Software Information Systems.

Modern management theory. The subject of control theory. Structural and functional components of the control system. Transients and characteristics of input-output. Model-driven systems. Handling and oversee of linear systems. Criteria Routh-Hurwitz, Mikhailov, Neykvista. Discrete and digital control system. Mathematical modeling of stochastic systems. Differentiation of random functions. The main criteria optimization. The method of the calculus of variations. Mathematical modeling of fuzzy systems. Design of fuzzy logic-based algorithms Mamdani and Sugeno. Development of data analysis using fuzzy clustering. Fuzzy Petri nets.

Systems and Technology of database Management. The main design principles database. Items of a relational database. Databases MS SQL SERVER. Table relational database. The notion of relational databases. Optimize time access to the database. Managing transactions. Processing algorithms that are stored on the server. Controlling access to the database.

Electrified technology in agricultural production. Basics photometry. Electric power optical measurement. Irradiate installations. Physical and technological properties of commercial agricultural products. Electro-cultivation methods. Basics of electric. Mechanical working machines and motors. Mechanical and electromechanical characteristics engines. Scheme electric.

Methods and tools of computer information technology. Algorithms and algorithmic. Software and programming languages. High-level programming languages. Software product and its characteristics. Information technology and model information processes. Information system: classification and types. The structure and architecture of information systems. The main phases of the design of information systems. Processes occurring furthering life cycle of information systems. The structure of the life cycle of information systems.

Introduction to the profession. The education system in Ukraine. Distance Learning. Assessment. Terms modular training. Trends of modern technology and design of information systems. Basic properties, concepts and categories of information and computer science. Informatization of Ukrainian society. The main stages of development and implementation, and automated information systems. Information Technology Management.

2.2. Disciplines chosen by students

Economics. Milestones of economic thought. Problems and patterns of functioning and development of social production. Property relations. Economic system. Commodity-money relations. Fundamentals of supply and demand in a market economy. A rational consumer choice. Operation of firms, markets, resources and market structures. Patterns of functioning of the national economy, monetary and financial systems. Formation of macroeconomic equilibrium and forms of macroeconomic instability. Fundamentals of State Regulation of Economy and International Economic Relations.

Law. Basic theory of law. Principles of Constitutional Law. Principles of justice and policing in Ukraine. Basics of administrative, financial and criminal law. Basics of civil, family, commercial, labor, environmental, agricultural, natural-resource and land rights.

Management. The concept and nature of management. Development of management science. Basic theory of managerial decisions. Performance Management. Planning Organization. Organization as a management function. Motivation. Management control. Leadership. Communication in management.

Political science. The subject of politics, laws, categories, methods and functions. History of establishment and development of political thought. Politics as a social phenomenon. Power and power relations. The political system of the society. The state as a political institution. Political parties and party systems. Local organizations and movements. Political elites and political leadership. Ukraine in the international geopolitical space.

Microprocessor control system. Classification and use of microprocessor systems. Architecture microprocessors. Using MPLAB environment for compiling and debugging programs. Programming of microprocessors. Programming in assembler. Use built-ins microprocessor in control systems: TMR0, nonvolatile data memory, analog-to-digital conversion, comparators, capture / compare / porotno-width modulation.

Multimedia in information technology. Analog and digital systems. Discrete transformations. Application of digital signal processing. Multimedia. Light and color. Raster graphics. Vector graphics. Fundamentals of Animation. Text. Fonts. Principles of image recognition. Analog and digital sound. Digital audio processing. Digital video. Video processing. Streaming audio and vudeo. Multimedia network. Copyright.

Theory of pattern recognition and classification in Artificial Intelligence systems. The basic concepts of the theory of pattern recognition. The basic definition of science of pattern recognition. Clustering. Bayesian approach. No Bayesian problem. Neyman-Pearson. Minimax problem. Classification recognition systems.

Bachelor
in specialty «ECONOMIC CYBERNETICS»
field of knowledge «Economics and Business»

Learning form, licensed volume:	
– full-time	50 persons
– correspondence	50 persons
Training term	4 years
Credits	240 ECTS
Language	Ukrainian, English
Qualification	Bachelor specialist in Economic Cybernetics

The concept of training

Specialty "Economic Cybernetics" is a unique combination of computer and economic disciplines, providing the opportunity to work in different areas. The concept of training is aimed at forming professionals who are fluent in information technology, management skills and workforce management business.

Practical training

Practical training of students in this field of study is aimed at mastering the basic techniques and methods of economic-mathematical modeling and forecasting of socio-economic processes using information systems and technologies in the management.

Proposed Topics for Bachelor theses

1. Situational diagnosis models of the financial situation of agricultural enterprises.
2. Optimize resource utilization potential
3. Production functions in optimization problems
4. Models of banks, leasing companies and stock exchanges functioning.
5. Economic-mathematical modeling of foreign exchange reserves

Academic rights of Bachelors – graduates can continue their studies under the Master Program in specialties features of which are placed in the curricula of Bachelor programs, beginning from the second or third courses:

8.03050201 «Economic Cybernetics»
or area of knowledge 1801 "Specific categories":
8.18010010 – «Quality, standardization and certification»
8.18010018– «Administrative Management»
8.18010020 – «Management of Educational Institution»
8.18010021 – «Higher School of Pedagogy»

Spheres of Bachelors employment

Graduates of the "Economic Cybernetics" specialty can work as: small business manager, head of the analytical center for processing economic, financial and accounting information, the head of information technology department, computer network administrator, administrator of tasks and systems, database administrator, analyst of computer systems etc.

Bachelors Program and Curriculum in Specialty "Economic Cybernetics"

№	The name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training*					
1	Ukrainian language for professional purpose	1	108	2,0	3,0
2	History of Ukraine	1	108	2,0	3,0
3	History of Ukrainian culture	1	72	1,3	2,0
4	Foreign language	1-4	180	3,3	5,0
5	Philosophy	2-3	108	2,0	3,0
6	Physical education	1-4	216	4,0	6,0
Total for the cycle			***576***	***10,6***	***16,0***
1.2. Cycle of natural science (fundamental) training*					
1	Political economics	1-2	180	3,3	5,0
2	Macroeconomics	4	144	2,7	4,0
3	Microeconomics	3	144	2,7	4,0
4	History of Economics and Economics Thought	1	180	3,3	5,0
5	Higher Mathematics	1-2	252	4,7	7,0
6	Probability Theory and Mathematical Statistics	3	180	3,3	5,0
7	Optimization Methods and Models	5-6	144	2,7	4,0
8	Informatics	1-4	216	4,0	6,0
9	Econometrics	4	108	2,0	3,0
Total for the cycle			***1548***	***28,7***	***43,0***
1.3. Cycle of professional and practical training *					
1	Business Economics	5-6	144	2,7	4,0
2	Management	5	144	2,7	4,0
3	Marketing	5	144	2,7	4,0
4	Finances	7	144	2,7	4,0
5	Money and Credit	3	144	2,7	4,0
6	Accounting	4-5	144	2,7	4,0
7	Labor Economics and Labor Relations	6	144	2,7	4,0
8	International Economics	7	144	2,7	4,0
9	Statistics	4-5	144	2,7	4,0
10	Sociology	3	144	2,7	4,0
11	Regional Economics	5	144	2,7	4,0
12	Vital activity security	2	72	1,3	2,0
13	Economic Cybernetics	4-5	360	6,7	10,0
14	Operations Research	6	144	2,7	4,0
15	Modeling of the economy	6-7	180	3,3	5,0
16	Prediction of social and economic processes	7	144	2,7	4,0
17	Decision making support systems	8	108	2,0	3,0
18	Technology of design and administration of DB and SB	5-6	144	2,7	4,0
19	Information Systems and Technologies in management	6-7	180	3,3	5,0
20	Management of the Information Projects	7-8	180	3,3	5,0
21	Models of economic dynamics	7-8	144	2,7	4,0
Total for the cycle			**3600**	**66,7**	**100,0**
Regulatory part, total			**5724**	**106,0**	**159**
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of humanitarian, social and economic training					
1	Law	3	108	2,0	3,0
2	Political science	4	108	2,0	3,0
3	Psychology and Pedagogy	8	108	2,0	3,0
4	Logic	1	108	2,0	3,0

5	Foreign language of professional orientation	5-7	180	3,3	5,0
6	Basics of labor protection	1	108	2,0	3,0
2.1.1. Cycle of natural science (fundamental) training					
7	Logistics	8	72	1,3	2,0
8	Economic-mathematical models in management and economics	6	108	2,0	3,0
9	Quantitative Methods in Economics	8	108	2,0	3,0
10	Automated processing systems of information	7	108	2,0	3,0
11	Economic Analysis	7	108	2,0	3,0
12	Basics of stock activity	8	108	2,0	3,0
2.1.3. Cycle of professional and practical training*					
1	Computer programming	3-4	144	2,7	4,0
2	The technology of crop production	2	108	2,0	3,0
3	WEB-programming	4	108	2,0	3,0
4	The theory of stochastic processes	6	108	2,0	3,0
5	Risk management	5	108	2,0	3,0
6	Technology of livestock production	2	108	2,0	3,0
7	Production management	7	72	1,3	2,0
8	Public communications	2	72	1,3	2,0
9	Simulation modeling	8	72	1,3	2,0
10	System analysis and design of IC	8	108	2,0	3,0
11	University education	1	72	1,3	2,0
Chosen by university, total			**2700**	**50,0**	**75,0**
2.2. Disciplines chosen by students					
2.2.2. Cycle of professional and practical training *					
1	Computer Networking		108	2,0	3,0
2	Econometric models of the economy		108	2,0	3,0
Chosen by students, total			**216**	**4,0**	**6,0**
Elective part, total			**2916**	**54,0**	**81,0**
Practical training			**648**	**12**	**18,0**
Degree examination			**144**	**2,7**	**4,0**
Total, according to the field of study			**8640**	**160**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.
**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Annotations to the disciplines " The Ukrainian language (for professional purposes)," "History of Ukraine", "The history of Ukrainian culture", "Foreign Language", "Philosophy", "Physical Education" see. Section 2.1.

1.2. Cycle of natural science (fundamental) training

Political science. Economic relations as a social form of production, the problem of effective use of limited resources and ways of social needs in different socio-economic formations. Principles of economic life, the laws of the economic system, the mechanisms of action of economic laws and their use by people in the business. The principal features of the basic social and economic systems and ways of their evolution.

Macroeconomics. Theoretical foundations of macroeconomics as a science. The method of calculation of basic macroeconomic indicators. Macroeconomic instability, unemployment and inflation. Aggregate demand and aggregate offering. Consumption, savings and investment, the total expenditure and GDP, economic functions of the state: the state in a system of macroeconomic regulation. Fiscal Policy. Money Market and Monetary Policy. Labor market and social policy. The open model of macroeconomic circulation and economic growth.

Microeconomics. Methodological principles of microeconomic analysis of economic behavior of market participants. Universal tools of rational economic decisions. Patterns of functioning microsystems individuals, households, businesses and organizations. Characterization and analysis of the major types of market structures - perfect competition, pure monopoly, monopolistic competition, oligopoly. Effect of general market equilibrium in the allocative efficiency of the economy, the limited failure of market regulation, welfare criteria, the need for intervention.

History of Economics and Economic Thought. Basic laws of economic development abroad on the most important stages of the process of socio-economic, socio-economic background of economic ideas and concepts around the world in certain historical periods. The main directions of economic thought since its inception to modern times in different countries and in Ukraine. Characteristics and specificity of economy of Ukraine in historical perspective.

Higher mathematics. Sets and functions: operations with sets, display sets, limitations, accurate numerical limits set, the principle of Cantor nested segments are equivalent sets, counted and countless sets. Theory border sequences, limit functions, partial, upper and lower limit function. Continuity of functions: local properties of continuous functions, properties of continuous functions on the interval. Differential calculus of functions of one variable: derivatives and differentials of arbitrary order, au-tic properties of differentiable functions, Taylor's formula and studies on extreme and graphing functions. Indefinite integral: primitive and indefinite integral, their properties change of variables and integration by parts, Tables of integrals, methods of integration: rational functions

Probability Theory and Mathematical Statistics. Basic concepts. Classification of random events. Probability of random events. Classical, Statistical and geometrical definition of probability. Almost reliable and virtually impossible event. Numerical characteristics of random variable the expected value, variance, standard deviation, moments, skewness, kurtosis, mode, median. Laws normal probability distribution, performance, uniform, Puasson. Correlation coefficient. Chebyshev inequality. Grouping information. The principle of defining and testing the null hypothesis. Criteria for approval to test the hypotheses.

Optimization Methods and Models. Conceptual aspects of mathematical modeling of the economy. Optimization of economic-mathematical models. Linear programming problems and methods of solution. The theory of duality. Integer programming. Special problems of linear programming. Models of nonlinear programming. Quantitative risk assessment. Mathematical methods for solving linear programming problems, the scope of their applications, advantages and disadvantages. Basic mathematical methods for solving problems of nonlinear programming advantages and disadvantages; mathematical tools build econometric models.

Econometrics. Principles of constructing econometric models. Multiple regression models. Generalized econometric models. Econometric models of dynamics. Mathematical building of econometric models. Method of constructing econometric models. Methods of calculating the parameters of models on personal computers using software packages.

Informatics. Object, methods and objectives of discipline, the theoretical foundations of computer science, information system support processes, software tools work with structured documents, network technology, the use of Internet in the economy, Essentials of Web-design, organization of computer security and information protection software works with databases and storage of data, basic office programming expertise and training systems, the prospects for the development of information technology.

1.3. Cycle professional and practical training

Business Economics. Types of companies and their legal forms. Theories and models of enterprise and entrepreneurship basics. The external environment of the enterprise. Staff enterprise productivity. Remuneration of personnel: basic forms and systems. Technological base of production and production capacity. Fixed and working capital: estimation and performance of fixed assets and how they play, composition and turnover of working capital performance. Intellectual capital and its characteristics. Investments: concept, composition, structure, development of investment projects. Forecasting and planning of the company. Justification of the production program of the enterprise. Financial and economic performance and efficiency. Systems to ensure competitiveness.

Management. Organization as an object of management, the nature and characteristics of the management, the development of ideas about management. Principles and methods of management. Internal and external environment of the organization: Communication in management and decision-making. Planning organization: Organizational structure. The motivation of the employees of the organization, system and process control in the organization. Formation and development of staff, management and leadership. The efficiency of the management of the organization.

Marketing. The essence of marketing and its modern concept. System and characteristics of modern marketing. Marketing Research. Marketing product policy. Planning for new products. Marketing pricing. Methods for marketing pricing. Marketing communications policy. Complex marketing communications. Marketing policy distribution. Managing channels of distribution. Organization and control of the marketing of the company.

Finance. The subject of financial science. Financial category. The genesis and evolution of finance. Finance and financial policies. Taxes and tax system. Budget. The budget system. Insurance. The insurance market. Financial Market. Finance businesses. International finance. Financial Management.

Money and Credit. Purpose and function of money, Money and cash flows, money market, money system, inflation and monetary reforms, foreign exchange market and currency system. Mechanism of the money supply and monetary policy, the role of money in a market economy; theory of money, credit essence and function, form, type and role of credit; Theoretical Foundations percent; Financial intermediation money market; Theoretical basis of commercial banks, central banks in the system monetary and banking management, international financial institutions and their cooperation with Ukraine.

Accounting. Overview of accounting, its subject and method. Balance. Accounts bookkeeping and double entry. Evaluation and calculation. Documentation, inventory, equipment and forms of accounting. Accounting for fixed assets. Accounting for inventories. Accounting for cash and receivables. Accounting of financial investments. Accounting for equity. Accounting for liabilities. Accounting for labor and its remuneration and social security staff. Expenditure of the company. Revenue and financial results. Financial Statements.

Labor Economics and Labor Relations. Labor Economics and Labor Relations as the direction of research and academic discipline. Regulation of industrial relations. Human capital as implemented employment potential. The quality of the workforce. The labor market in the system of industrial relations. Regulation of employment. Performance. Productivity: the nature and methods of measurement. Factors reserves and productivity. Types, sources and structure of incomes. Differentiation of income: concepts, factors, methods of measurement. The level and quality of life and its regulation. HR in the system of industrial relations at the micro level. Organization of work. Standardization work. Salaries in market economy. Organization of wages. Tariff regulation of wages. Systems of remuneration. Analysis of the employment figures. Planning labor indicators. Accounting and Auditing at work.

International Economics. International Economic System: subjects and objects of international economics. International economic activity: the theory of international trade and international economic activity. The world market for goods services: types, current trends, pricing in international trade. Global financial markets: financial resources, species. Global labor market and international labor migration. The world monetary system: the nature, structure, stages of development, especially the foreign exchange market. Globalization of economic development: the nature, characteristics, consequences, contradictory, role of international organizations in addressing global world problems. Ukraine's integration into the world economy.

Statistics. methodological principles of statistics, statistical observations, reports and statistical clustering data summarizing statistical indicators, analysis of the distribution of numbers, concentration analysis, differentiation and similarity distributions, sampling method, statistical methods for measuring relationships, analysis of the intensity dynamics, analysis of trends and fluctuations; index method, presenting statistical data: tables, graphs, maps.

Sociology. The essence of the society, its main features. Characterization of society as a social system. Classification of types of historical societies. Features of modern social life. Sources of social development. The subjects of social progress. The social structure of society, its basic elements. Social stratification and mobility. Methodology and methods of cognition of social phenomena and processes.

The regional economy. The subject, method and discipline problem. Patterns, principles and factors of productive forces and the formation of regional economies. Economic regions and territorial organization of the economy. Region in a system of territorial division of labor. The essence of the purpose and objectives of regional economic policy. The mechanism of regional economic policy. Commercial complex of Ukraine, its structure and transformation in market conditions. Economy of Regions of Ukraine: status and prospects of development. Scientific principles of environmental management. Environmental monitoring and environmental information.

Vital activity security. Human life and health under adverse environmental factors of work and residence. Legal and regulatory framework for the protection of human health and life. The use of individual and collective protection of health and life.

Economic Cybernetics. Terms of cybernetics. Introduction to applied mathematics. Introduction to information theory. Systems theory. Management of production systems. Methods of Economic Cybernetics.

Operations Research. Essence phases of operations research, principles and methods of mathematical modeling operations, principles of selection and mathematical software for practical implementation problems. Queuing models. Models of management. Models of human behavior. Models of risk management.

Prediction of social and economic processes. Theoretical basis of forecasting of socio-economic systems and algorithms for basic forecasting methods modern transformation processes. Mathematical modeling as a method of forecasting. Extrapolation prediction. Adaptive forecasting methods. Expert prediction.

Modeling economy. Methodology and methods of modeling. Mathematical models of real economic systems. Conceptual Foundations of Economic Modeling. Algorithmic models in economics. Production functions. Rated assessment of the economy. Model behavior of producers and consumers. Input-output model. Macroeconomic models

Decision Support Systems. Fundamentals of Decision Support The structure, principles, classification of decision support systems. Support of the decision making in many criteria. Targeted programming. The method of analysis of hierarchies. Fundamentals of Data Mining for DSS. Data mining. Practical application of data mining in economics and management. Neural networks and fuzzy logic in DSS

Technology of design and administration of DB and SB. Relational data model that accommodates relational algebra and relational calculus. The classic approach to database design based on the principles of normalization. Top features of the approaches to semantic modeling of databases, the issues of planning, development, implementation and maintenance of databases, introduction to structured query language SQL, data types used in SQL, means the definition of database objects, data manipulation, data retrieval tools. Utilities databases and applications to databases in integrated development environments Access. Features of the databases to MySQL The principles of expert systems, neural networks, principles of knowledge bases.

Information systems and technologies of management. The essence of information systems and their importance in managing of modern enterprises. Current status and trends in information technology. Methodology for developing information systems to determine their quality and efficiency. Fundamentals management of information resources and technology. Formation of structure information in the enterprise. The use of integrated automated information systems in business. Determination of the main characteristics of expert systems. The use of artificial intelligence technology in the management of organizations. Using the Internet in management cadres. The use of e-commerce in practice organization.

Project management information. The theoretical basis of project management. Classification and environment projects. The life cycle of the project. Using standard life cycles. information systems. The structure of the project. Managing the implementation of project-oriented activity. Activity organization. Planning in UP. Control in project management. Management of the project. Management subject area projects. Managing time in the project. Cost Management. Quality management of the project. Integrated project management functions. Automation functions of project management.

Models of economic dynamics. Theoretical framework and toolkit modeling of dynamic economic processes. Principles of modeling of economic processes. Linear dynamic processes. Equilibrium and disequilibrium. Nonlinear dynamic models of economic systems. Qualitative methods of analysis of socio-economic processes. Stochastic models of economic dynamics, models of economic change, synergistic approach to modeling dynamic systems.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.1.1. Cycle of natural science (fundamental) training

Law. Basics of theory of law. Principles of Constitutional Law. Principles of justice and policing in Ukraine. Basics of administrative, financial and criminal law. Basics of civil, family, commercial, labor, environmental, agricultural, natural-resource and land rights.

Political science. Subject of the discipline. Political power. Political regime. Political system. The state as the basic institutions of the political system Political parties and associations. Civil Society. Mankind rights. Political culture. Political Ideology. The political elite. Political leadership. Ethnic Relations. Ethnic Policy. International relations and foreign policy.

Psychology and Pedagogy. Emergence and development of pedagogical concepts. Pedagogy: Research status, functions, tasks. Historical development of education and educational systems. Characteristics of the process of education. Psychology: Research status, functions, tasks, history of. Cognitive mental processes. Emotional and volitional mental processes. Psychology of personality. Activity and activity. Interpersonal Communication

Logic. Basic laws of correct thinking. The concept, judgment, reasoning. Basic laws of proper thinking. Emotional and wiliness psychical processes. The law of identity, the law of contradiction. Law solely for the third. Proof. Refutation. Structure of refutation. Rules of refutation. Types of rebuttal.

Fundamentals of labor security. Basic labor laws and regularities. The concept and definition of safety, organization of labor security work in the workplace. Fundamentals of physiology, occupational health and industrial hygiene. Safety and fire prevention;

2.1.2. Cycle of professional and practical training

Logistics. Logistics in a market economy. Classification of forms logistics entities. Description of the main elements of logistics. Processes and materials management. Factors shaping logistics systems. Materials Management in logistics systems. Harvesting logistics. The essence of distribution logistics. Of internal logistics. Logistics mediation. Logistics warehousing. Transport logistics

Economic-mathematical models in management and economics. The subject, content, objectives and structure of the course. Classification model features modeling processes in animal husbandry. Features build models of plant processes. Theory and practice of economic and mathematical analysis in the planning of agricultural production and evaluation of its effectiveness in market conditions. Agricultural enterprise as an object modeling.

Quantitative methods in Economics. Principles of design and analysis of linear, nonlinear and dynamic models of socio-economic processes. Linear, nonlinear and dynamic model of socio-economic processes. Data processing, design and analysis of linear models of socio-economic processes. The analysis of linear models of production and distribution. Models of competition. Networking linear model. Examples and analysis of nonlinear and dynamic models in economics.

Automated systems of information processing. Stages and phases of design and implementation of Isa-Modern methods, tools and technologies design of automated circuits. On functional, logical and physical design of ICs, using modern technology. On methods of documenting IP. Methods of testing, testing and maintenance of IP.

Economic Analysis. Scientific basis of economic analysis. Method and methodology of economic analysis. Organization of information of economic analysis. The use of economic logic and economic-mathematical methods and models for the study of business economics. Methodological Basis of analysis the most important indicators of industrial and financial activity

Fundamentals of stock activities. History of stock trade and current state of the stock market. Commodity Exchange, as part of the market infrastructure. Regulation of stock trade. Exchange transaction. Organization and technology stock trading. Stock Exchanges. Basics functioning of Currency Exchange.

Computer programming. Basic theory of programming and software development technologies, including specific professional requirements. basic principles of software and the requirements for it. General requirements for software systems, programming techniques using modern tools.

The technology of crop production. Status and trends of the main crop in Ukraine, values and biological characteristics of crops, species and crop varieties, use, distribution, and potential productivity and performance, modern high-growth technology, environmentally-friendly crop yields in different soil-climatic zones of Ukraine , ways and means of improving the quality of agricultural products, measures to prevent crop losses during harvesting. transportation and storage, ways to reduce labor costs for crop production

WEB-programming. The basic structure of language, layout techniques and communication with other development tools WEB-pages. Using of Cascade Style Sheets CSS in HTML. Description Syntax CSS, accommodation options describing CSS in the document body and beyond, CSS attributes for block and lowercase markup. Methods for positioning of the markup with CSS. Basics of programming in JavaScript. Logic development JavaScript-code and the basic principles of its use in the pages of World Wide Web programming language PHP. Client-server technology as the main area of application of the PHP language.

The theory of stochastic processes. Introduction to stochastic processes. Processes with discrete time. Properties realizations of random processes. Random processes of the second order. Stationary random processes and sequences. Markov processes. The process of reproduction and death and branching processes. Homogeneous processes and strongly continuous semigroup. Processes with independent increments. Diffusion stochastic processes. Stochastic integrals and Ito stochastic differential equation.

Risk management. Quantitative methods for risk assessment. Personal utility function. Quantitative characteristics of the risk assessment. Playing methods of decision making under uncertainty. Solving conflicts through gaming techniques. The fundamental relationship of risk and return. The fundamental relationship of risk and return of individual instruments of the financial market. Financial risk regulation. Risks in the use of biological resources and environmental management. Problem diversify the portfolio model of Markowitz, the model of the stock market CAPM, other standard tasks of evaluating the economic risk.

Technology of livestock production. Research and theoretical foundations processes. and evaluation of animal products. Effective implementation of the selection process in the desired direction and organization of biologically reasonable and economically feasible production technology, processing and storage of animals. System control practices integrated complex processes, based on which the technology of

production, processing and storage of animals. The principles of process streams of raw materials. Production of meat, fish and dairy products, eggs of different purposes of destination.

The organization of production. Theoretical Foundations of production. Analyze of agro-processes. Technical and economic indicators rational organization of production systems. Selection and justification of the production structure of the enterprise. Specialization of production. Organizational, technical, and economic elements of production.

Public communication. Research Methodology Social Communications. Theory and history of social communications. Social and communication technology. Social Communication in management.

Simulation modeling. Essence, the development and application of simulation modeling. Main stages of building simulation models. Generation of random events and random variables during machine simulation. Time Management simulation. Simulation modeling of economic processes for example to determine the optimal tax rate. A simulation model of the inventory control. Planning for simulation experiments

Standardization and quality control. Legal, organizational and methodological principles of standardization, metrology, certification and food safety management at the national, regional and international levels. Development and practical application of regulations ND different categories for animal products, harmonized with international ISO and European standards EN.

System analysis and design of integrated circuits. Building system models of problem situations. Concepts and patterns of system analysis. Methods of system analysis. System analysis Business process objects computerization. Design of ICs by means of UML. System management of complex objects. Standards documentation system solutions.

The economy of world agriculture. Globalization of world agriculture and food resources. . Poverty and the problem of the world's population with food. Food pyramid nutrition. Environment and quality of food. The world food market and its trends. The transformation of the economic role of the state in matters of public food products. Integration of agriculture and food industry. The role of scientific - technical progress in agricultural development and solving the food problem. Providing food to the population of Ukraine.

University education. Common approaches to modern integration processes in education in the context of the Bologna process. Modern economics in the context of the Bologna process. Fundamentalization and individualization of training in higher education. The educational process at the National University of Life and Environmental Sciences of Ukraine NUBiP of Ukraine. Organizing professional training specialty "Economic Cybernetics". Initial training of students from specialties "Economic Cybernetics". Library and how to use its funds, including library NUBiP of Ukraine. Social and cultural infrastructure NUBiP of Ukraine. Student Government and Politics Department of CSES and NUBiP of Ukraine.

2.2. Disciplines chosen by students

Computer networks. The concept of the structure of computer networks. The notion of protocol. The main functions of protocols at different levels. Protocol stack architecture of computer networks. Physical layer protocols. The characterization of linear signals are used in computer networks. Link layer protocol HDLC, PPP and others. Protocols Ethernet level. Methods and routing protocols. Addresses in IP-based networks. Principles of transport layer protocols. Protocols TCP, UDP. Protocols LAN. Protocols Ethernet, Token Ring, FDDI. Protocol Wireless LAN. Standard IEEE 802.11. Principles of application layer protocols. File Transfer Protocol FTP. Protocols email. Protocol HTP.

Econometric models of the economy. steam regression and correlation, multiple regression, system econometric equations in economics, time series. Mathematical and statistical tools of econometrics. General linear multiple regression model in economic research. Analysis of simultaneous economic equations. Models and methods of statistical analysis in Economics.

2.12. EDUCATION AND RESEARCH INSTITUTE OF NATURAL SCIENCES AND THE HUMANITIES

Director – Doctor of Chemical sciences, professor
Kopilevych Volodymyr Abramovych

Phone.: (044) 527-84-09, 527-80-50
E-mail: natural_nni_director@twin.nauu.kiev.ua
Location: educational building №2, room 12, 23

FACULTY OF PEDAGOGY

Dean – candidate of technical sciences, associate professor
Tarasenko Rostyslav Oleksandrovych

Phone.: (044) 527 80 83,
E-mail: pedagogy_dean@twin.nubip.edu.ua
Location: educational building № 15-a, room. 237

The faculty organizes and coordinates the educational process of bachelors in the following specialties:

6.010106 «Social Pedagogy»

Graduate department of:

Social pedagogics and informational technologies in education
Phone.: (044) 527-80-73,
E-mail: socpedagogy@ukr.net
Head of department – Doctor of pedagogical sciences, professor
Tverezovska Nina Trokhymivna

6.020303 « Philology (translation)»

Graduate departments of:

Foreign philology and translation
E-mail:kifip@ukr.net
Head of department – Doctor of pedagogical sciencesm professor
Amelina Svitlana Mykolaivna

Romano - Germanic languages and translation
Phone.:(044)527-85-95, E-mail:krgm@ukr.net
Head of department – Candidate of philological sciences, associate professor
Nikolenko Andrii Heorhiiovych

Bachelor
in specialty "SOCIAL PEDAGOGY"
field of knowledge "Pedagogical education"

Form of education, licensed amount:	
– full-time	50 persons
– extra-mural	50 persons
Duration of studying:	4 years
- Full-time	
- extra-mural	
	5 years
Credits	240 ECTS
Language of teaching	Ukrainian, English
Qualification of graduates	Bachelor Social teacher

The concept of training

Training of social teacher is caused by the need of our state in specialists which perform a job directed on social-pedagogical help, support, defense and rehabilitation of all categories of children and youth in rural area. Professional activity of this specialist is supposed to be directed on solving of production questions in directions of learning social-pedagogical problems concerning of socialization of fosterling children and youth , organization of their public defense, performing of consulting in social-pedagogical questions, organization of their leisure time, giving help in the process of education to persons which have direct relationship to it.

Practical training

Practical training is performed according to the schedule of educational process directly at the licensed bases of practice, between them: regional center of social service for families, children and youth; departments which work with children of the street; educational-healthcare complexes; territorial centers of social servicing; pre-school educational institutions; general schools of I-III levels; centers of social-psychological rehabilitation.

Academic rights of Bachelors – they can continue education at the programs for masters in specialties, whose features are put in the educational plans of bachelor programs, starting from the second or third year of studying:

8.01010601 - «Social Pedagogy»
Or specialties from branch of knowledge 1801 "Specific categories"
8.18010010 - «Quality, standardization, certification »
8.18010018 - «Administrative management »
8.18010020 - «Management of educational institution»
8.18010021 - «Pedagogy of Higher School»

Spheres of Bachelors employment

Social teacher may work at the system of educational institutions, houses and centers of children's education, cultural centers and schools of fine arts, social-educational services and clubs, children's and public organizations, services of keeping, department of juvenile services, center of social defense and help, employment centers and job connections.

Bachelors Program and Curriculum in Specialty “Social Pedagogy”

№	The name of course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training*					
1	History of Ukraine	1	108	2,0	3,0
2	Ukrainian language (in professional direction)	1	108	2,0	3,0
3	Philosophy	2-3	126	2,3	3,5
4	Foreign language	1-4	234	4,3	6,5
5	History of Ukrainian culture	2	72	1,3	2,0
6	Basics of economical theory	6	216	4,0	6,0
7	Political science	5	144	2,6	4,0
8	Religion science	1	72	1,3	2,0
9	Science of law	4	144	2,6	4,0
10	Physical training**	1-7	378	7,0	10,5
Total for the cycle			***1602***	***29,7***	***44,5***
1.2. Cycle of natural science (fundamental) training*					
1	Modern informational technologies	3	108	2,0	3,0
2	Bases of Ecology	4	72	1,3	2,0
3	Technical ways of studying	2	72	1,3	2,0
4	Civil defense	8	72	1,3	2,0
5	Life safety	6	126	2,3	3,5
6	Labor safety	7	72	1,3	2,0
Total for the cycle			***522***	***9,7***	***14,5***
1.3. Cycle of professional and practical training*					
1	Pedagogic	1-3	468	8,6	13,0
2	Psychology	1-3	396	7,3	11,0
3	BAge physiology and school hygiene	6-7	180	3,3	5,0
4	Basics of medical knowledge	2	72	1,3	2,0
5	Valeology	2	72	1,3	2,0
6	Logics	1	54	1,0	1,5
7	Introduction into specialty	2	162	3,0	4,5
8	Principles of person’s socialization	5-6	144	2,6	4,0
9	Social Education	3-4	558	10,3	15,5
10	Pedagogics of family education	5	72	1,3	2,0
11	Theory and history of social education	6	144	2,6	4,0
12	Technology of social-pedagogical activity	7-8	252	4,6	7,0
13	Social psychology	4-5	234	4,3	6,5
14	Ethics and psychology of family life	5-6	144	2,6	4,0
15	Ethics of social-pedagogical activity	4	72	1,3	2,0
16	Basics of occupational guidance	8	72	1,3	2,0
17	Basics of social-jural safety	4	72	1,3	2,0
18	Social-pedagogical prophylaxis of violation	5	144	2,6	4,0
19	Ethnopsychology	6-7	234	4,3	6,5
20	History of social work	7-8	144	2,6	4,0
21	Psychological-pedagogical basics of interpersonal communication	2	72	1,3	2,0
22	Psychopathology	5	126	2,3	3,5
23	Self-education and Self-regulation	8	108	2,0	3,0
24	Social work in the field of leisure	7-8	144	2,6	4,0
25	Ecoculture	5	72	1,3	2,0
26	Methods of family tutor work	8	90	1,6	2,5
27	basics of Oratory	7-8	144	2,6	4,0
Total for the cycle			***4446***	***82,3***	***123,5***
Regulatory part, total			***6570***	***121,7***	***182.5***

2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of humanitarian, social and economic training*					
1	Basics of Agricultural manufacturing	5-7	306	5,6	8,5
2	Sociology	5	72	1,3	2,0
3	Culturology	1	108	2,0	3,0
4	Family-household culture and domestic economics	1	108	2,0	3,0
Total for the cycle			***594***	***11,0***	***16,5***
2.2. *Cycle of natural science (fundamental) training*					
1	Mathematical statistics	6	162	3,0	4,5
Total for the cycle			***162***	***3,0***	***4,5***
2.3. Cycle of professional and practical training*					
1	Comparative pedagogics	6-7	144	2,6	4,0
2	Age and pedagogical psychology	2	144	2,6	4,0
3	Civil law	4	108	2,0	3,0
Total for the cycle			***396***	***7,3***	***11,0***
Chosen by university, total			**1152**	**21,3**	**32,0**
2.2. Disciplines chosen by students					
1	Agrarian law	3	90	1,6	2,5
2	Industrial relations law	3	90	1,6	2,5
3	Ukrainian studies	4	162	3,0	4,5
4	History of social work in foreign countries	7	108	2,0	3,0
5	Basics of gender politics	7	72	1,3	2,0
6	Document science	4	126	2,3	3,5
7	Decorative floristics	1	72	1,3	2,0
8	Conflictology	8	72	1,3	2,0
9	Esthetics	8	54	2,0	1,5
Chosen by students, total			***846***	***15,7***	***23,5***
Elective part, total			***1998***	***37***	***55,5***
Practical training			***414***	***7,7***	***11,5***
Degree examination			***72***	***1,3***	***2,0***
Total, according to the field of study			***8640***	***160***	***240***

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.
**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Annotation of the disciplines “Ukrainian language (in professional direction)”, “History of Ukraine”, “History of Ukrainian culture” , “Foreign language”, “Philosophy”, “Physical training”.

Basics of economic theory. Social manufacturing and its results, economical relations of property, dividing and formation of income, product and money, market, enterprise, credit-product system, business, world husbandry.

Political science. Theoretical-methodological problems of politological knowledge, development of views of famous foreign and domestic thinkers on politics, place and role of political subjects in the system of political-commanding relations of society and state, rudiments of politics.

Religion science. Phenomenon of religion, its origin, basic theological conceptions, history and modern condition of tribal, early and late national religions, basic statements of belief systems and cult of the most influential religions of the world.

Legal science. Characteristic of basic theories about origin and main points of the state and law, constitutional legislation of Ukraine, system of law enforcement of Ukraine, separate branches of Ukraine legislation.

1.2. Cycle of natural science (fundamental) training

New information technologies. The processes of information processing are considered, taking into account the role and place of these processes in the development of knowledge and society.

Fundamentals of ecology. Subject, tasks and structural units of modern ecology, environmental factors and their classification, effect of environmental factors on the organism, the main environmental problems in Ukraine and ways to solve them.

Technical means of teaching. The content of modern technical means of teaching and their didactic purpose, the basic methods of using technical means of teaching.

Civil defense. Objectives and the organizational structure of civil defence, classification and the most important characteristics of emergency situations of natural and technogenic origin, organization and planning of protective measures, the implementation of rescue and other emergency operations in emergency situations.

Life safety. A person is considered as an object that needs to be protected in the environment, peculiarities of the human body, the influence on him natural environment (climate, atmosphere, hydrosphere, electromagnetic radiation).

Professional safety. The task of professional safety, legal and organizational basis of safety control, methods of injury rate causes investigation and planning preventive measures.

1.3. Cycle professional and practical training

Pedagogy. The problems of the theory and practice of teaching organization (didactics), upbringing and education management (educational process and school management) are considered.

Psychology. General questions of psychology, mentality development peculiarities in phylo- and ontogenesis, the dynamic of mentality development, mentality processes, mental health and characteristics of individuality.

Developmental physiology and school hygiene. Physiological characteristics, hygiene standards and requirements aimed at health protecting and promoting and harmonious development and improvement of capability of children and teenagers organisms.

Fundamentals of medical knowledge. First aid treatment in life-threatening conditions that caused internal diseases, infectious diseases, injuries and accidents.

Valeology. Culture of health; formation, preservation and strengthening of human health in the spiritual, mental and physical aspects; tempering the body, physical and mental health promotion, balanced diet, organization of work and leisure.

Logic. The method of logic, basic forms and laws of thought, background of modern logic, subdivision of classical logic, types and analysis of formal and logical theories within prepositional logic and predicate logic.

Introduction to the speciality. Solving of main tasks and functions of social teacher, requirements for his individuality and organization of labour activity.

Fundamentals of individuality socialization. Theory of individuality socialization, modern theoretical approaches in solving the problem of individuality socialization, political, economic, ethnic and role socialization of individuality.

Social Pedagogy. Solving of the theoretical foundations of social pedagogy, grounds of content of leading tendencies of professional social and educational activities with representatives of different social groups.

Pedagogy of family upbringing. Theory and methods of family upbringing, its goals and tasks; problems and prospects of the modern family development, its functions and types, characteristics of social work with problem and young families, interaction of school social teacher and family.

Theory and history of social upbrining. The history of social upbringing development in different times in different countries; acquaints students with pedagogical thought since Ancient East to the present days.

The technology of social and pedagogical activities. Social technologies and technologies of social and pedagogical activity, implementability of pedagogical and psychological methods in social and pedagogical activity.

Social Psychology. Rules of people behavior and activities, characteristics of human interaction with different subjects of social environment, the ways and means of effective communication, people group activity characteristics.

Ethics and psychology of family life. Family relationships, ethical demands of family life, psychological methods of practical help to families.

Ethics of social and pedagogical activity. Historical features of socio-pedagogical ethical traditions development in Ukraine and abroad, ethics code and principles of social teachers professional activity.

Fundamentals of professional orientation activity. The development of professional orientation, tendencies of professional orientation, professional orientation as a system of interconnected components, organizational structure of professional orientation management.

Fundamentals of social and legal protection. Basic theoretical concepts of social and legal protection of individuality in Ukraine and abroad, technologies of social teachers activity.

Socio-pedagogical prevention of administrative offence. Subject matter of hard to upbring and pedagogical neglect, characteristics of teenagers study, practical application of young offernders studying methods.

Ethnopsychology. Ethnopsychological originality of people belonging to different ethnic groups, human reasons of act formation and settlement of interethnic mutual relations.

History of social work. The development of social assistance in Ukraine and abroad, the most important social and pedagogical concepts of the past, forms and methods of social work.

Psychological and pedagogical foundations of interpersonal communication. Mechanisms of interpersonal communication, rules, methods and means; establishing of interpersonal contact and setting up interaction.

Pathopsychology. Mechanisms of mental disorder and individuality traits in condition of mental or physical diseases, abnormalities of human mental activity development, psychological analysis of complex situations of interaction with people who have abnormalities in mental development.

Self-education and self-control. Description of content, methods and means of self-education, planning and organization of individuality self-education.

Social work in the field of entertainment. Conditions of individuality social formation in the field of entertainment, features and organization of social and pedagogical work with different groups of children and young people in need of assistance, support and protection through the sphere of entertainment.

Ecological culture of the individuality. The relationship of human and environment, requirements for ecological culture, formation of individuality ecological culture.

Methods of tutor work. The historical development of tutorship, methods of individuality education at home at various stages of social development.

Fundamentals of oratory. Laws, mechanisms, rules, methods and means of speech activity, persuasive and role speech.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.1.1. Cycle of humanitarian, social and economic training

Fundamentals of agricultural production. The place of agriculture as an industry, the state and main ways of industry development at present in Ukraine and developed countries, the organization of agricultural production.

Sociology. The structure of sociological knowledge, fundamentals of society sociological analysis, the analysis of social phenomena and processes in terms of sociology, the basic methodological principles of organizing and conducting of social investigation.

Cultural studies. Culture, methodology of studying cultural phenomena, types of cultures, comparative analysis of cultures, cultural evolution, the development of Ukrainian culture.

Family and domestic culture and home economics. Culture of family communication, conducting business meetings, conferences, negotiations, conflict overcoming, housing, home management, family budget planning.

2.1.2. Cycle of natural science (fundamental) training

Mathematical statistics. Methods of mathematical statistics in social and pedagogical research, fundamentals of measurement and quantitative description of the data, statistical estimation and statistical hypothesis, dispersive analysis of the experimental data, analysis of the effect of individual factors on the effective index. Methods and models of object classification.

2.1.3. Cycle of professional and practical training

Comparative pedagogy. Formation of scientific fundamentals of comparative pedagogy, its history; education reforming at present stage, ways of updating and improving the efficiency increasing of the educational process, the present-day state and prospects of education development in foreign countries and in Ukraine.

Developmental and Educational Psychology. Features psychological, personal development at different stages of life, the use of psychological capacity of teacher and student in learning, education, mastery of social experience.

Civil law. The provisions of the Civil Code of Ukraine, the theoretical and practical problems of their applications, contracts.

2.2. Disciplines chosen by students

2.2.1. Cycle of professional and practical training

Agrarian Law. Principles and methods of legal regulation of agrarian relations, agrarian law and effective activity of agricultural enterprises and their employees.

Labor Law. Employment relationship, patterns of organization and functioning of labor relations, contracts, compliance with labor legislation, international legal regulation of labor.

The history of social work in foreign countries. The history of social work in foreign countries, models of social security of the population in Europe and the U.S., public services and services provided to different categories of people.

Fundamentals of Gender Pedagogy and Psychology. Trends and consequences of the socialization of men and women, gender differences, gender personality characteristics, gender relations.

Document Science. General theoretical problems of documentation: function of documents, peculiarities of documents, kind and typological classification of documents, document-functioning communication system.

Ornamental Horticulture. The essence of the problem and decorative flower arranging, creating three-dimensional and planar floral compositions implementation decorative floral design.

Conflictology. Tolerance to people interaction strategies in conflict situations, basic conflict prevention, conflict resolution techniques.

Aesthetics. The development of sensitive human culture, type specific genres of art.

Ukrainian Science. The historical aspect of the formation of the Ukrainian state, the ethnogenesis of the Ukrainian people, stages of the Ukrainian nation, ethnogenetic and state building process in Ukraine, the achievement of the Ukrainian people in the field of material and spiritual culture.

Bachelor
in specialty "PHILOLOGY (TRANSLATION)"
field of knowledge “Humanities"

Form of study, licensed volume:	
– full-time	50 students
Learning time: full-time	4 years
Credits	240 ECTS
Language of training	Ukrainian , English, German
Qualification of graduates	Bachelor of Linguistics, English teacher (German) language

The concept of training

Training in "Philology (Translation)" are stipulated by requirements in the translation of scientific and technical literature and documentation agrobiological, engineering and technology, forestry, ecological, research in product quality and safety, agribusiness, agricultural economics and so on.

Practical training

Practical training is carried out according to the schedule of the educational process directly to certified practices bases, including: Ukrainian Research Institute of productivity agriculture, commodity exchange "Kiev agroindustrial exchange", Department of Internal Policy administrative-territorial organization and information management executive office Khmelnytsky Regional Council , Ukrainian Institute examination of plant varieties, LLC "Fund Environmental (Green) Investments" Cultural Center "Cambridge University Press" enterprise with foreign capital PIC "Orsi", LLC "Idex-production" Private Enterprise "Antario M".

Academic rights of Bachelors - can continue their studies on the Master's Programmes on specialties signs which are placed in the curricula of undergraduate programs, beginning with the second or third courses:

8.02030304 –"Translation" or field of knowledge 1801 "Specific categories":
8.18010010 - "Quality, standardization and certification"
8.18010018 - "Administrative Management"
8.18010020 - "Academic Institution"
8.18010021 - " Pedagogy of Higher School "

Spheres of Bachelors employment

Specialist of philology is able to translate scientific and technical (agricultural) and business literature, realize counsultations deal with translation, can work as a translater at organizations of industrialists and businessmen, professional and social organizations, agencies print. Also a graduate can work as a teacher of foreign languages at secondary schools.

Bachelors Program and Curriculum in Specialty " Philology (Translation)"

№	The name of course, practice	Semester	Volume		
			Hours	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training*					
1	History of Ukraine	1	108	2,0	3,0
2	Philosophy	2	108	2,0	3,0
3	The history of Ukrainian culture	1	72	1,3	2,0
4	Politics	3	108	2,0	3,0
5	Professionally –oriented Ukrainian language	1	108	2,0	3,0
Total for the cycle			***504***	***9,3***	***14***
1.2. Cycle of natural science (fundamental) training*					
1	Fundamentals of Applied Linguistics (computer processing Translation)	1	108	2,0	3,0
2	Fundamentals of Ecology and Safety of Vital Activity	3	72	1,3	2,0
3	Introduction to Translation	2-3	162	3,0	4,5
4	Latin language	1	72	1,3	2,0
5	Introduction to Germanic Linguistics	4	72	1,3	2,0
6	Contemporary Ukrainian Literature	1	72	1,3	2,0
7	International Protocol and Etiquette	2	36	0,7	1,0
8	Aspect translation agricultural literature	7, 8	126	2,3	3,5
Total for the cycle			***720***	***13,2***	***20***
1.3. Cycle of professional and practical training*					
1	Practical course of basic foreign language	1-8	2430	45,0	67,5
2	The stylistics of the basic foreign language	7	72	1,3	2,0
3	Comparative lexicology of basic foreign and Ukrainian language	6	72	1,3	2,0
4	Comparative Grammar of the main foreign and Ukrainian languages	6	72	1,3	2,0
5	The practice of translation and interpretation	4-8	648	12	18,0
6	Ukrainian language for translators (translation editing)	6	72	1,3	2,0
7	Fundamentals of Labour Protection	8	54	1,0	1,5
Total for the cycle			**3420**	**63,2**	**95**
Regulatory part, total			**4644**	**86**	**129**
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of humanitarian, social and economic training*					
1	Religion Sciences	2	72	1,3	2,0
2	Logic	4	36	0,7	1,0
3	Ethics	3	36	0,7	1,0
4	Aesthetics	4	36	0,7	1,0
5	Legal Science	5	72	1,3	2,0
6	Economic Theory and Fundamentals of Management and Marketing	8	90	1,7	2,5
7	Psychology	6	72	1,3	2,0
8	Ukrainian and Foreign Culture	4	108	2,0	3,0
9	Sociology	6	72	1,3	2,0
10	Physical education	1-4	270	5,0	7,5
2.1.2. Cycle of natural science (fundamental) training					
1.	History of Foreign Literature	1 - 2	108	2.0	3.0
2.	Modern Literature of Basic Language	6	36	0.7	1.0
3.	Grammar in Practice (Basic Language)	1 -5	342	6.3	9.5
4.	History of the Basic Foreign Language	5	72	1.3	2.0
5.	Practical Stylistics of the Ukrainian	5	72	1.3	2.0

	language and communication skills				
6.	Scientific and technical translation	7 - 8	108	2.0	3.0
7.	Linguistic study in English speaking countries	6	72	1.3	2.0
8.	Pedagogics	5	72	1.3	2.0
9.	Training theory and methodics	6	72	1.3	2.0
10.	Methodics of the foreign languages training	7	162	3.0	4.5
11.	Business communication and correspondence translation	8	54	1.0	1.5
12.	Special course on the principles of branch glossary development	8	54	1.0	1.5
Chosen by university, total			**1224**	**22.5**	**34.0**
			2088	38.5	68.0
2.2. Disciplines chosen by Students					
2.2.1. Cycle of professional and practical training					
1.	Second foreign language practical course and translation	2-8	1728	32.0	48.0
2.	Symantec and stylistic problems in branches' texts translation				
2.1.	Cycle of natural specialties	7	36	0.7	1.0
2.2.	Cycle of technical specialties	7	36	0.7	1.0
2.3.	Cycle of economical specialties	7	36	0.7	1.0
2.4.	Cycle of humanitarian specialties	7	36	0.7	1.0
Chosen by students, total			**1872**	**34.8**	**52.0**
Elective part, total			**3960**	**73.3**	**110.0**
Practical training			**270**	**5**	**7.5**
Degree examination			**36**	**0.7**	**1.0**
Total, according to the field of study			**8640**	**160**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.

**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

One could find disciplines annotations in Chapter 2.1. They are as follows: "The Ukrainian language and professional communication skills", "History of Ukraine", "History of the Ukrainian Culture", "Philosophy".

Political science. Theoretical and methodological problems of political knowledge; ideas of prominent foreign and Ukrainian thinkers about politics; place and role of political phenomena in the system of political and state authority relationship; political principals.

1.2. Cycle of natural and scientific (fundamental) training

Basis of informatics and applied linguistic (computer translation). Structure peculiarities and technical characteristics of modern personal computers and other devices, their application to conduct linguistic research and translation.

Basis of ecology and vital activity safety. Ecological factors and their classification; influence of ecological factors on living organism; main ecological problems in Ukraine and its decision; human's organism and its peculiarities; environmental influence on man's organism (climate condition, air atmosphere, hydrosphere, etc).

Introduction into translation study. Translator's activity; the history about foundation and development of theory about translation in Ukraine and outside the country; theory and classification of translation; lexical, grammar and syntaxes transformations; stylistic characteristics of idioms, proverbs and sayings, slangs, verb phrases, and word expressions.

Introduction into the Germanic language study. Scientific realization of isomorphism and allomorphs manifestation among Germanic language group; basic terms and definitions knowledge, mastering skills concerning self- analyses of language information.

International protocol and etiquette. The main tendencies in modern international communication, international protocol and etiquette tendencies, diplomatic and international correspondence.

Aspects of agrarian literature translation. Theoretical grounds of agrarian texts translation; adequate reflection of various terminology characterized agrarian literature, mastering translating skills.

Latin language. Mastering the Latin language knowledge, as well as skills needed to translate Latin texts and using Latin terminology in training, scientific and production activity.

Modern Ukrainian Literature. Literary process phenomena at the end of X1X-th – and early XX-th centuries; the most important historical and literature processes; the Ukrainian prominent literary representatives' creative works.

1.3. Cycle of professional and practical training

Basic foreign language practical course. Mastering phonetic knowledge, vocabulary, grammar in practice; development of reading and audio skills; oral speech (communication) and writing.

Basic foreign language stylistics. Essentiality of language stylistics, communicative and texts stylistics, functioning of language units in language system; functioning styles and its characteristics, criteria, methods of analysis and texts' interpretation.

Basic foreign language and the Ukrainian language comparative lexicology. Theoretical bases of lexicology and lexicography: practical application of the language units in communication; lexical skills and habits mastering.

Basic foreign language and the Ukrainian language comparative grammar. Foreign and the Ukrainian languages typological peculiarities; grammar construction in compared languages; fixation of similar attributes and distinctions in the systems of grammar categories in various parts of language, and syntactic units.

Practical course of oral and writing translation. Theoretical and practical course of oral and writing translation; translator's transformations; non -equivalent lexica; the types of semantic distinctions; contextual meaning of lexical units; the types of semantic correspondence; factors of style.

Work protection grounds. The main tasks of the subject "Work protection"; legal and management basis providing work protection; methodics investigating the causes of traumas and planning of preventative measures.

The Ukrainian language for translators (redaction and wording). Introduction basic terms and definitions to students needed for redaction and texts' wording; further mastering skills and habits concerning redaction of a translated text.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.1.1. Cycle of humanitarian, social and economic training

"Physical Training" discipline annotation one could find in chapter 2.1.

Religion science. Religion phenomena, its foundation, the main religious conceptions, the history and modern status of national religions; the basic principals of religious culture of the most influential world religions.

Logics. Methods of logics; the main forms and laws of thinking (mentality); the history of modern logics formation; division of classical logics, typology and analysis of formal and logic theories within the logics of phrase and predicates.

Esthetics. Development of a man's sensitive culture; visual specific of art genres.

Ethics. Historical development and foundation of moral ideas, morality in the context of socio cultural changes.

Science of law. Characteristics of the main theories dealing with state and law principles; the Ukrainian constitutional legislation; the system of the Ukrainian law enforcing organs; separate branches of the Ukrainian legislation.

Basis of economical theory, management and marketing. Public production and its results (outputs); economical privacy relations; profit development and sharing; goods and money; market; enterprise; system of credit and goods; business; the world economic; the basis of management and marketing.

Ukrainian and foreign culture. Theoretical aspects of culture; the base stages of world culture development; the base stages the Ukrainian culture development.

Sociology. The structure of sociological knowledge; the basis of sociological public analysis; the analysis of public (social) phenomena and process in sociological categories; the basic methodological principles dealing with sociological researches.

Psychology. General psychological problems; the peculiarities of psyche development and formation in phyto- and ontogenesis; psyche process; state of mind and person peculiarities.

2.1.2. Cycle of professional and practical training

Basic foreign language modern literature. The most important historical and literary process in certain country which language is studied; creative works of country's prominent representatives

Basic foreign language practical grammar. Mastering the foreign language grammar system, developing skills concerning recognition, understanding and reproduction of grammar forms orally and written.

Practical stylistics of the Ukrainian language and communication. Language culture basic grounds, functioning of business communication in accordance with certain specialty; the basic principles of dictionary application; business papers execution; translation standards from English into Ukrainian.

Scientific and technical translation. Solution of grammar, lexica, terminological and genre - stylistic tasks; translation of certain science and technique phenomena.

Theory and Methods of Training. Theoretical and methodic grounds dealing with organization of training process; training method structure; the structure of educational information content; training organization.

Foreign language training methodics. Purpose, content and principles of foreign languages training; methodics, techniques, technologies and forms of training; planning of foreign language training process; development of language and speech competence in accordance with requirements and standards.

Business communication and correspondence translation. Basic lexica and grammar peculiarities of business communication and correspondence style and means of their recreation in translated texts; genre business documents classification.

Special course of branch glossaries composition. Theoretical grounds of branch glossaries composition; organization of their composition.

History of the basis foreign language. Processes dealing with language formation and development and its structure; its historical characteristics and attributes; similarity with other languages of certain language group; its specific peculiarities.

Basic foreign language linguistic science and country ethnography. Language units reflected country's national and cultural peculiarities; students' communicative competence development in acts of cross-cultural communication through adequate perception of language and original texts.

History of foreign literature. Analysis and interpretation of art works in accordance with historical division.

Pedagogics. Training theory and its practical organization are introduced (till didactic); education and school management.

Practical stylistic of the Ukrainian language and communicative culture. Theoretical basis of stylistics, actual problems of modern science; stylistic standards of the Ukrainian language.

2.2. Disciplines chosen by students

2.2.1. Cycle of professional and practical training

Practical course of the second foreign language and language translation. Mastering phonetic, lexica, and practical grammar knowledge, as well as skills dealing with audio, reading, oral and written communication.

Translation of branch's texts and its symantec and stylistic problems. The system of theoretical knowledge and adequate translation of the language units (words, expressions, idiomatic expressions, free word combinations possessing specific structure; sentences, texts); introducing semantic and stylistic problems dealing with translation of various branch texts, such as follows: natural sciences, technical, economic and humanitarian specialties.

2.13. SEPARATED SUBDIVISION OF NULES OF UKRAINE "IRPIN ECONOMIC COLLEGE"

Head of Economic College, Candidate of Economic Sciences, docent
Sergii Ivanovych Mykhailov

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DEPARTMENT OF COMMODITY AND BUSINESS

Head of Department
Tetiana Anatoliivna Semenenko
Tel.: (045) 97 54220
Address: academic building № 2

The department organizes and coordinates educational processes of bachelors in specialty:

6.030510 «Merchandising and commercial business»

Bachelor
in specialty «MERCHANDISING AND COMMERCIAL BUSINESS»
field of knowledge "Economics and Entrepreneurship"

Form of teaching, licensed volume:	
– day-time	50 people
– correspondence	50 people
Study terms:	4 years
Credits	240 ECTS
Teaching language	Ukrainian
Qualification of graduates	Bachelor of commodity and trade business, commodity

The concept of training

Training of skilled professionals in the field of commodity and trade to meet the constant demand for skilled professionals who can work effectively in institutions, organizations, enterprises of different ownership types in the trade.

Practical training

Curriculum is provided in 4 practices: 2 training (production situation, information systems and technology in the trade), technology and production practices. Places of having production practices: association «Віста»; association «Комплекс Агромарс»; association «Аміда»; Ltd. «Торгівельна Компанія «Слов'яночка»; ДП «Продмережа «Фуршет»; association «ЕКО», supermarket «Екомаркет»; association «Рост-маркет»; Store «Фора»; Trade Network NOVUS.

Academic rights of Bachelors – graduates can continue their studies in the Master Programme in NULES Ukraine in the field: 1801 «Specific categories»:

8.18010010 – «Quality, standardization and certification»
8.18010018– «Administrative Management»
8.18010020 – «Management of the institution»
8.18010021 – «Pedagogy of High School»

Graduates can continue their studies at other universities for Master Programme in the field:8.03051001 «Commodity and commercial activity»
8.03051002 «Commodity and expertise in customs»
8.03051003 «Examination of goods and services»
8.03051004 «Goods safety and quality managing»
8.03051005 «Wholesale and retail trade organization»

Spheres of Bachelors employment

Commodity specialist can apply their knowledge and skills in many areas of professional activity — commodity, commercial, trade, business, marketing. Graduates can work at the positions (direction *«Commodity and Commercial Activities»)*: trade agent, trade representative, the inspector shopping, Inspector merchandise, logisticians, an expert analyst of commodity market research, expert methods to expand markets, merchandiser and others.

Bachelors Program and Curriculum in Specialty «Merchandising and commercial business»

№	Name of the course, practice	Semester	Amount		
			Hours	Credits	
				National	ECTS
1. REGULATORY ACADEMIC DISCIPLINES					
1.1. Cycle of humanitarian, social and economic training					
1	Ukrainian language (for professional purposes)	1	108	2,0	3,0
2	History of Ukraine	1	108	2,0	3,0
3	History of Ukrainian Culture	1	72	1,3	2,0
4	Foreign Language	1-4	180	3,3	5,0
5	Philosophy	2-3	108	2,0	3,0
6	Politics	7	72	1,3	2,0
7	Physical Education **	1-4	216	4,0	6,0
Total for the cycle			***648***	***12,0***	***18,0***
1.2. Cycle of natural science (fundamental) training					
1	Higher and Applied Mathematics	1, 2	324	6,0	9,0
2	Physics	1, 2	324	6,0	9,0
3	Chemistry	1, 2	360	6,7	10,0
4	Microbiology	3	162	3,0	4,5
5	Information systems and technology	1	162	3,0	4,5
6	Materials science and foundation technology goods	3,4	180	3,3	5,0
7	Statistics	4	108	2,0	3,0
Total for the cycle			***1620***	***30,0***	***45,0***
1.3. Cycle of professional and practical training					
1	Theoretical foundations of commodity	3	270	5,0	7,5
2	Sensory analysis	4	108	2,0	3,0
3	instrumental methods	4	108	2,0	3,0
4	Commodity (Food)	5,6,7,8	648	12,0	18,0
5	Commodity (non-foods)	5,6,7,8	648	12,0	18,0
6	Commodity (services)	8	144	2,7	4,0
7	Commodity (packaging materials and packaging)	8	144	2,7	4,0
8	Technical Regulations (the basis of standardization, metrology and quality management)	4	144	2,7	4,0
9	Technical regulations (conformity assessment)	8	144	2,7	4,0
10	Trade organisation	5	216	4,0	6,0
11	Trading Enterprise	5	144	2,7	4,0
12	Marketing	6	180	3,3	5,0
13	Logistics	7	144	2,7	4,0
14	Trade Economics	6	216	4,0	6,0
15	Accounting and Auditing	4	162	3,0	4,5
16	Foreign trade of the enterprise	6	144	2,7	4,0
17	Management	7	162	3,0	4,5
18	Labor protection	7	54	1,0	1,5
19	Life safety	2	72	1,3	2,0
Total for the cycle			***3852***	***71,3***	***107,0***
Regulatory part, total			**6120**	**113,3**	**170,0**
2. ELECTIVE ACADEMIC DISCIPLINES					
2.1. Disciplines chosen by University					
2.1.1. Cycle of natural science (fundamental) training					
1	Biochemistry and Physiology of Nutrition	3	108	2,0	3,0
2	Research basics	1	108	2,0	3,0
3	Safety of products and environment	7	72	1,3	2,0
Total for the cycle			***288***	***5,3***	***8,0***
2.1.2. Cycle of professional and practical training					
1	The world market of goods and services	2	108	2,0	3,0
2	Consumer Protection	4	144	2,7	4,0
3	Commercial activities	6	108	2,0	3,0

4	Equipment of trading companies	2	108	2,0	3,0
5	Esthetics and Design	3	108	2,0	3,0
6	Conjuncture of commodity market	6	72	1,3	2,0
Total for the cycle			***648***	***12,0***	***18,0***
Chosen by university, total			**936**	**17,3**	**26,0**
2.2. Disciplines chosen by students					
2.2.1. Cycle of humanitarian, social and economic training					
1	Law (Law, Labour Law)	2	144	2,7	4,0
2	Right (economic, commercial)	5	144	2,7	4,0
3	Economic Theory	3	108	2,0	3,0
4	Sociology	5	72	1,3	2,0
5	Psychology	1	72	1,3	2,0
6	History of Economics of Ukraine	3	108	2,0	3,0
7	Business Communication and Conflict	5	72	1,3	2, 0
8	Ecological Culture	3	108	2,0	3,0
9	Ukraine in the geopolitical relations	5	72	1,3	2,0
10	Culture	1	54	1,0	1,5
11	The political system of society	2	72	1,3	2,0
12	The formation and development of the state and its forms	5	72	1,3	2,0
13	Economic Psychology	5	72	1,3	2,0
14	Trade psychology	1	72	1,3	2,0
15	Health Psychology	1	54	1,0	1,5
16	Sociology of Youth	2	72	1,3	2,0
17	Social and information technology in modern society	5	72	1,3	2,0
18	HR	5	72	1,3	2,0
2.2.2. Cycle of natural science (fundamental) training					
1	The competitiveness of the enterprise	7	72	1,3	2,0
2	Patenting	8	54	1,0	1,5
3	Food Chemistry	7	72	1,3	2,0
4	Statistics on the goods and services	8	54	1,0	1,5
5	Pricing	5	54	1,0	1,5
6	Insurance	5	72	1,3	2,0
7	Distribution of productive forces	5	54	1,0	1,5
8	Exchange operations	5	72	1,3	2,0
2.2.3. Cycle of professional and practical training					
1	Commodity components of market	7	108	2,0	3,0
2	Estimation	8	108	2,0	3,0
3	Technology of storage and transportation of food	8	108	2,0	3,0
4	Fundamentals of practical commodity	7	108	2,0	3,0
Chosen by students, total			**1044**	**19,3**	**29,0**
Elective part, total			**1980**	**36,7**	**55,0**
Practical training			**486**	**9,0**	**13,5**
Degree examination			**54**	**1,0**	**1,5**
Total, according to the field of study			**8640**	**160**	**240**

*cycles of disciplines according to the requirements of standards for higher education, later than 27.08.2010, EQC and OPP.

**Physical training is included into curriculum (30 h), but is not credited.

Annotations of disciplines in the curriculum

1. Regulatory academic disciplines

1.1. Cycle of humanitarian, social and economic training

Annotations of disciplines "Ukrainian language (for professional purposes)," "History of Ukraine", "The history of Ukrainian culture", "Foreign Language", "Philosophy", "Physical Education" see. Section 2.1.

1.2. Cycle of natural science (fundamental) training

Higher and Applied Mathematics. Elements of linear algebra. The system of linear equations. Determinants. Matrix. Calculus. Function. Numerical sequence. Differential calculus of functions of one variable. Derivative of functions of one variable. Differential functions of one variable. Research function using derivatives. Integral calculus of functions of one variable. Differential Equations. Rows. Probability. Statistical and geometrical definition of probability. Mathematical Statistics. The method of testing statistical hypotheses. Mathematical Programming.

Physics. Physical principles of mechanics. Kinematics. Dynamics. Rotational motion of a rigid body. Energy and work. Oscillations and waves. The differential equation of harmonic oscillation. Wave processes. Molecular physics and thermodynamics. Kinetic theory of the structure of substances. Electricity. Electrostatics. Dielectrics. Semiconductors. Direct electric current. Electromagnetism. Substance in a magnetic current. Electromagnetic field. Optics. Diffraction of light. Fundamentals of quantum optics. Physics of atoms and nuclei. Law of radioactive decay.

Chemistry. Chemistry of inorganic compounds and methods for their study. Redox reactions and their application in the preparation of materials and methods of analysis. Chemistry of metals and nonmetals. Chemistry of organic compounds and methods for their study. Colloidal disperse systems and their study. Engineering of chemical reactions. Calorimetry. Kinetics of chemical reactions and catalysis. Surface phenomena and adsorption. Microheterogeneous system. High-molecular compounds. Gels and jelly.

Microbiology. Morphology and taxonomy of microorganisms. Physiology of microorganisms. Ecology of microorganisms. The main ways of microbial contamination of raw materials, products and production capacity. The most important biochemical processes which pathogens are microorganisms. Pathogenic microorganisms. Microbiology of food of plant and animal origin.

Information Systems and Technology. The concept of computer science and computer engineering. The structure and basic modern PC devices. The principles and structure of the PC software. Operating System MS Windows. Text editor MS Word. Spreadsheet MS Excel. Database MS Access. Technology means of creating presentations of PowerPoint. Fundamentals of computer networks. Enterprise information systems and the management of its activities. Economic data, means of formalized description and processing technology. Current approaches to the development and implementation of IP. Information Systems commercial enterprises and organizations. Integrated information systems. Decision support systems and expert systems.

Materials science and technology base products. Materials science as science. Patterns of structure formation materials. Formation of the structure and properties of materials. Properties of materials. The materials used in the production of consumer goods. Structural materials. Functional materials. Materials technology. Raw materials production. Processes. Corrosion. The basic technology of food production. Basics of hydraulics. Thermal, mechanical, mass transfer processes in food technology.

Statistics. Methodological Principles of Statistics. Statistical observation. Mixing and group statistics. Generalizing statistical indicators and general principles of their application. Rows of distribution and analysis. Index analysis method. Analysis of trends. Selective observation.

1.3. Cycle of professional and practical training

Theoretical Foundations of commodity. Object and subject of commodity. Methodology of commodity. Scientific basis for the formation of product requirements. Requirements for the goods. Properties catalog. Quality products and methods of assessment. The range of goods. Classification of goods. Fundamentals of maintaining the quality and quantity of goods in the goods movement. Coding. Product Details.

Sensory analysis. Sensory analysis and its importance in evaluating during the quality of consumer goods. The psychophysiological basis of sensory analysis. Taste. Perceptions and definitions smell. Visual sensations. Sense of touch. Auditory sensation. Organoleptic research methods.

Instrumental methods. Preparation of samples for research. Photometric Methods of goods. Electrochemical Methods of goods. Chromatographic Methods of goods. Spectral Methods of goods. Physical, chemical and biochemical methods goods.

Commodity (Food). Wheat products. Fruits, vegetables, mushrooms and products of their processing. Taste goods. Dietary fats. Starch, sugar, sugar substitutes, and honey. Confectionery. Milk and milk products. Eggs and egg products. Meat and meat products. Fish and fish products. Food concentrates.

Commodity (non-foods). Household goods. Textile, sewing and knitted goods. Shoe products. Fur products. Items of everyday use. Jewelry products and household clocks. Fancy goods. Pharmacy products. Weapon. Commodity books.

Commodity (services). Characterization of scheduled sectors of world market place and Ukraine in the global services market. Classification of subjects and objects of the insurance market and its segmentation. Regulation of world trade in services. Features of the financial services market. State tourism services in Ukraine and the factors that influence the development of tourism. Market services of the CIS countries and leading trade partners of Ukraine in the CIS. Features regulating world markets services. Criteria for assessing the quality of services. Certification of schemes catering services. Certification of hotel services.

Commodity (packaging materials and packaging). The role of packaging materials and packaging. Classification, standardization and unification of packaging for consumer products. The functions of packaging. Trends in modern packaging materials. Certification of containers and packaging in Ukraine. Main and auxiliary materials used for the manufacture of wooden containers. Standards of quality paperboard for consumer packaging. Branded packaging. Basic properties of parchment, parchment brand. Thermoformed packaging. Health surveillance of the safety of the use of polymeric materials and containers intended for contact with foodstuffs. Marking plastic containers. Marking glassware. Marking a metal container.

Technical Regulations (the basis of standardization, metrology and quality management). Key features and principles of standardization. Integrated standardization. Prospective standardization. Parametric standardization and its mathematical base. The concept of standardization. State supervision over compliance with standards. International Organization for Standardization (ISO). Cost-effectiveness standardization. Metrology as a science. Metrological characteristics - quality and technical level of measurement. Ensuring traceability. Legal metrology. Structure of metrological standards. Nomenclature of quality products and their classification. Types of evaluation of product quality.

Technical regulations (conformity assessment). Essence and content of certification. Legal basis of certification in Ukraine. Principles, rules and structure of systems of certification. Certification system of similar products in UkrSEPRO. Certification of food products and food raw materials. Certification of industrial products. Certification of imported goods. Activities in the field of ISO certification.

Trade Organization. The essence of the concept of "trade", its origin and development. Functions of trade in the economic environment. The concept, classification, study of the role of demand in retail. The concept of choice and shopping task on its formation. Organization of wholesale purchase and selling of goods and its documenting. Goods delivery (retailing) management. The role and functions of containers and packaging in the organization of trade processes and distribution.

Trading enterprise. The essence of the role of entrepreneurship and its features in the trade. Conditions, factors and principles of commercial enterprise. The organizational forms of commercial enterprise. Formation of business trade business. Entrepreneurial activity in the retail trade. Entrepreneurship in the restaurant business. Business activities in wholesale trade. Business activities in the field of foreign trade. Entrepreneurial activity in commercial real estate. Entrepreneurial activity in the service sector. Fundamentals of business planning. Strategies for Commercial Activities. Government regulation of business. Ethics and Social Responsibility of commercial enterprise.

Marketing. Marketing Concept. Marketing Research. Marketing product policy. Marketing pricing. Marketing policy distribution. Marketing communication policy. Marketing activities managing.

Logistics. Conceptual Foundations of logistics. Objects of logistics management and logistics operations. Logistics activities and logistics functions. Logistic approach to material management in sphere of circulation. Logistic approach to customer service. Optimize procurement and inventory management solutions in logistics systems. Structure and transport in logistics.

Trade economy. The essence of trade and commercial activities. Economic characteristics of retailers. Economic characteristics of wholesale. Economic characteristics of foreign trade. Infrastructure of consumer market and its role in its development. Turnover as a measure of commercial enterprise. Commodity stocks and commodity trading software company.

Accounting and Auditing. Theoretical basis of accounting. Method of accounting. Organization of accounting in commercial enterprises. Accounting major business processes of the enterprise. Control medium commercial enterprises as the object of the audit. Organization audit of commercial enterprises. Audit methods. Information resources accounting and audit in the management of commercial enterprises.

Foreign trade enterprises. Economic activity and its role in national economic development. Major trends and indicators of economic activity in Ukraine. Regulation FTA in Ukraine. Customs and tariff regulation of FTA. State taxes in foreign trade. Non-tariff regulation of foreign trade. Currency regulation FTA in Ukraine. International payments and banking FTA. The forms of the enterprises on foreign markets. Pricing in foreign trade business. Trade and mediation in international markets. Compensation trade in foreign trade. The risks of foreign trade and insurance. Transportation FTA. Foreign trade enterprises in free economic zones.

Management. The essence of the role and methodological foundations of management. Laws, laws and principles of management. Management process. Planning, organizing, motivating, controlling, regulating both general management functions. Information and communication management. Management and Leadership. Performance Management.

Life Safety. Scientific basis of life safety. Physiological and psychological criteria of human security. Basics of valeology. First aid in the case of accidents. The environment of human life. Negative electrical and electromagnetic factors. Global problems of mankind. Food Safety. Civil defense. Disasters and elimination of their consequences. Protection of population and territories from emergency situations.

Labour protection. Duties of employees in relation to observance of regulations on labor protection. Liability of officers and employees for violations of occupational safety legislation. Standards in the field of labor. The bodies of state supervision of safety, their main powers and rights. Instructing on safety. Fundamentals of physiology of labor.

2. Elective academic disciplines

2.1. Disciplines chosen by University

2.1.1. Cycle of natural science (fundamental) training

Biochemistry and physiology of nutrition. The structure of living organisms, cell structure, chemical composition of organisms. Proteins: structure, properties and role in the body. Protein products of protein metabolism. Nucleic acid. Protein synthesis. Vitamins. Enzymes. Carbohydrates: The use of carbohydrates in the food industry. Carbohydrate metabolism in the body. Redox processes. Lipids: Lipid metabolism in the body. The relationship of metabolism in the body.

Safety of products and environment. Theoretical and practical aspects of the environment: scientific and technological progress and environmental pollution, ecological problems of anthropogenic pollution of the atmosphere, hydrosphere and space. The main legal and institutional aspects of environmental protection, environmental management and safety products. Modern environmental problems in Ukraine. Ecology of food and its importance to human health. Environmental aspects of the production of consumer goods. Disposal of solid waste production of consumer goods.

2.1.2. Cycle of professional and practical training

The world market of goods and services. Theoretical bases of functioning and development of the global market for goods and services. Availability country economic resources, production technologies. The international division of labor and its actors. Foreign policy.

Consumer Protection. The legal framework of consumer protection. Fundamental rights of consumers of goods and services. Rights quality goods and services. Mechanism of consumer protection. Features of Consumer Protection the implementation of certain trading activities, services and execution of work. Features consumer protection when purchasing certain goods. Responsibility for violation of legislation on consumer protection. Consumer policy on consumer protection in Ukraine and abroad.

Commercial activities. Objects and subjects of business, the system of economic relations commercial entities, organizing wholesale purchases of goods, organization distribution, goods delievery retail network, the formation of variety of goods in the channels goods delievery, forms and methods of retail goods and customer service , the effectiveness of business, commercial risk.

Equipment of trading companies. Scientific and technological progress in the trade. Commercial and non-mechanical equipment. Weighting equipment. Electronic cash registers. Vending Machines. Refrigeration equipment. Handling Equipment. Technology equipment.

Esthetics and design products. Fundamentals of esthetics, terminology courses, development of artistic styles and modes of artistic design catalog system, elements that form the aesthetic properties of products (shape, geometric form of the form, texture, texture, carcass, color, composition, pattern). The aesthetic properties of products: complex and individual performance aesthetic properties, information precision, symbolic, originality, rational form, integrity, composition, manufacturing excellence performance. Evaluation aesthetic qualities: Expert, sociological. Requirements documentation to the aesthetic properties.

Conjuncture commodity market. The concept of commodity market conjuncture. Global commodity markets: structure and classification. Summary of the economic conjuncture. Macroeconomic conditions. Indicators conjuncture. World prices: concept, types, especially the formation. Specificity of conjuncture of market research. Specificity of conjuncture studies of certain markets. Weather conjuncture commodity markets.

2.2. Disciplines chosen by students

2.2.1. Cycle of humanitarian, social and economic training

Law (Law, Labour Law). Basic theory of law. Principles of Constitutional Law. Principles of Civil Law. Fundamentals of Employment Law. Fundamentals of environmental law. Basic Law on social protection. Basics of Family Law. Basics of housing law. Fundamentals of Finance. Principles of administrative law. Fundamentals of criminal law.

Right (economic, commercial). Concept and types of business. Property rights of entrepreneurs. Legal regulation of business in commercial circulation. Legal basis of government regulation of business. Legal regulation of foreign economic activity of business entities. Legal responsibility for offenses in the field of entrepreneurship. Protecting businesses.

Economic Theory. Economic categories and laws. Functions economic theory. Economic system and ownership structure, its place and role in the economic system. Economic needs, social and economic interests. The productive forces of social production and its structure. Forms of social production. Commodity production. Goods and its properties, the nature, mechanism of action and function. Occurrence, nature and functions of money. Fixed and working capital. Trading profit. Essence and types of income. Social protection. Social reproduction.

Sociology. The essence and history of social science. Methodological foundations of sociology. Society as a social system, its social structure. Personality in the social relations. Social institutions and processes. Sociology of economic life, the sociology of youth, sociology of the family. Methodology and techniques of sociological research.

Psychology. Psyche and its functions. Nervous system, brain and psyche. Psychic phenomena being. Arbitrary behavior and reflex. Mental processes. Attention, imagination and development. Memory and its types and individual characteristics. Intelligence, its components and the conditions of development, mental action. Requirements and emotions. Motivation and the will of man. Formation and development of individual psychological characteristics of personality. Psychological foundations of communication. Psychological effects of different social groups.

History of Economics of Ukraine. Features of the economic development of Ukrainian lands from ancient times to the middle of the XVI century. Economic development of Ukrainian lands in the second half of XVI - first half of XIX century. Agrarian reform of Ukrainian lands in the mid XIX century. Economic development of Ukrainian lands in the second half of XIX - early XX century. Ukraine's economy in the years of revolutionary turmoil and civil war (1917 - 1920gg.). Economic development of Ukrainian lands in the interwar period. Economy of Ukraine during the Second World War and post-war reconstruction. Major trends in economic development and efforts to reform the Soviet economic system in 50-80th years of XX century. The economy of independent Ukraine.

Business Communication and Conflict. The essence and meaning of communication and their characteristics. Legal framework of information and communication activities. Technology and communications types, their features. Sociological and psychological models of communication. Engineering psychology and

business communication. Basics of business etiquette and protocol. The notion of conflict. Interethnic and family conflicts. Prediction, prevention and conflict prevention. Media and conflict. The negotiation process as a way to resolve conflicts. Theory and practice of conflict resolution.

Ecological Culture. Ecological culture as an activity. Greening of human activity. The spatial expanse of human life. Natural resources and their use. Food resources and human development. Energetic basis of human life. Human activity and environmental crises. Ecological culture as a means of self-organizing systems "Man-Biosphere'. Ecological culture ethnicity. Legislative and legal framework for environmental management.

Ukraine in the geopolitical relations. Geopolitical history of Ukraine. Inside Ukraine Geopolitics: Theory and Practice. Strategy of Ukraine in geopolitical space. Ukraine in today's geopolitical environment. Geopolitical structure of the Black Sea region. Ukraine in geopolitical strategies neighbors. Geopolitical Transformation of Europe: Ukraine's place in the new structures. International factor of geopolitical processes for Ukraine.

Culture. Basic characteristics of the phenomenon of culture. Categories of Culture. Your original culture. Ancient civilizations. Ancient world. Ages. Renaissance. New and modern times. The development of modern culture.

The political system of the society. The subject and methodology of the discipline. The theory of power and power relations. The political culture. Political parties and party systems. Political elites and leadership. World political process and political forecasting.

Formation and development of the state and its form. Nature and purpose of the state. The functions of the state. The state and the individual. A man, a person, a citizen: the ratio of concepts. Legal status: concepts and structure. Human rights: concept and structure. Concept, content and structure of civil society. Form state. The form of government. Form of government. National treatment. Mechanism and machine state. Concept, characteristics and types of agencies. The rule of law. Trends in the rule of law in Ukraine. The state of society in the political system.

Economic Psychology. An introduction to economic psychology. The economic psychology of money. Psychology of economic behavior in the labor market. Psychology of business. Consumer psychology. Socio-psychological aspect of the problem of wealth and poverty. Psychological aspects of employment.

Trading psychology. The object and purpose of psychology trading. Mental processes and emotional - volitional personality. Personality psychology seller and buyer. Psychological aspects of the sale of goods. Communication as scientific - practical problem. Professional culture of communication and business etiquette. Conflict as a psychological phenomenon. Business in the trading team.

Health Psychology. Subject, tasks and methods of health psychology course. Building a healthy lifestyle personality. The concept of mental hygiene. Stress and health. Modern concepts of stress. Lifestyle and health. Self-identity in health psychology. Social and psychological aspects of AIDS. Psychoprophylaxis mental health in different age groups.

Sociology of Youth. Youth as object and subject of object public relations. Social and psychological characteristics of contemporary youth community. Social problems of modern Ukrainian youth and social research. Social characteristics of modern Ukrainian youth. Characterization factors of social differentiation youth in Ukrainian society. Ukrainian schools in the field of youth research issues: history and modernity. Values of youth in social crisis. Youth culture: problems and prospects. Youth employment: dynamics, challenges and prospects. Social portrait of the modern student.

Social and information technology in contemporary society. The concept of the information society as a theoretical basis for contemporary culture. Historical stages of formation and development of the information society. Culture in the Information Society. Culture Information Society as a culture of cyberspace.

Management. Competitiveness staff as an object of strategic management of the organization. Project management of personnel in the marketing personnel. Sources of information and regulations for staff development. Economic aspects of staff development. Forecasting and planning staff development. Planning and organization of training and retraining of managers and professionals. Plan your work and work with career personnel reserve. Planning and organization of social development staff. Promote staff development.

2.2.2. Cycle of natural science (fundamental) training

The competitiveness of the enterprise. Competitiveness as a category and the property company that operates in the market. Competitive environment of the company. Competitive advantage. Competitive strategies. Competitiveness of the goods and methods of assessment. System and process management of enterprise's competitiveness. Development and implementation of programs to improve competitiveness. Quality management as the foundation of modern enterprise competitiveness.

Patent. The intellectual property system. The concept of intellectual property: the origin, formation and development. Intellectual Property. Objects and subjects of intellectual property rights. Structure of the system intellectual property rights protection. Legislation of Ukraine in the field of intellectual property. Protection of intellectual property rights. The international system of intellectual property rights. International protection of industrial property.

Food Chemistry. The subject of food chemistry. The structure and methods of food chemistry. Main areas of food chemistry. The value of food. Classification of modern food. Historical stages of development and establishment of food chemistry. Value of Food Chemistry for IT Pros Commodity trade and business in the competent and safe use of food.

Statistics markets for goods and services. Statistical study population as potential consumers in the market of goods and services. Statistics of national wealth, national accounts, production companies in various industries, efficiency of social production. methodological foundations of statistics market goods and services. Statistics of trade flows. Statistical study of the direct flow of goods and services in the domestic market. Statistics movement of goods and services in foreign markets. Statistics reverse movement of goods. Statistical monitoring of product market conditions.

Pricing. The concept of cost basis of price, cost of production and pricing. Pricing for export-import marketing. Relationship quality for standardization, methodology and quality management organization and technology trade marketing.

Basic scientific research. The concept of the science of evolution. Organization of research. Methods of research. Information management research. Rational organization of labor in the process of scientific research. Effectiveness research, criteria and problems of assessment. Scientific and scientific-pedagogical personnel. General requirements and rules for registration of research.

Insurance. Insurance in the economic subsystem of society. Risks in insurance and management. Legal basis of insurance relations. Organization and regulation of insurance. Differentiation of insurance objects and types of hazards. Principles of insurance. Calculation of insurance premiums. Insurance tangible assets of companies and organizations. Features of agricultural insurance. Insurance coverage of personal

property. Obligations of the insurer in property insurance. Insurance moral interests of the individual. Insurance liability and its implementation in personal insurance. Insurance business. Responsibility as the object of the insurance relationship. Flow of funds from the insurance company. Management of Insurance Operations.

Placement of the productive forces. The subject, the methodology and objectives of the course. Patterns, preconditions and principles of RPS. Method of placement and territorial organization of the productive forces. Background of productive forces. Factors of productive forces. Features of the complex inter-branch organization. International divisions of labor and international economic relations. Economic regions of Ukraine.

Exchange operations. Stock market: current state and trends. The formation and development of the stock market in Ukraine. Legislative and legal regulation of the exchange market. Commodity exchange as part of the infrastructure market. Organization and technology exchange trading. Exchange trade in agricultural products and food. Stock exchanges and their activities. Currency Exchange. Mediation in the stock market. Fundamentals of futures trading. Options trading on the exchange. Pricing on the stock market and price quotes. Risks in stock Trade and the criteria for their evaluation. Hedging and stock exchange speculation. Clearing and settlement in the stock market. Computer technology in stock trading.

2.2.3. Cycle of professional and practical training

Commodity components of market. General methodological approaches to resolving commodity problems of market. Issues of quality and competitiveness of food products in a market economy. Development of multicomponent food and general health care appointments. System analysis technology new food products. Prediction and quality control of goods in the goods movement. Optimization of technology solutions in the promotion of food products on the market. Packaging - component quality and competitiveness.

Estimation. Conceptual Foundations of valuation of goods. Types of examinations. The role and function of the Chambers of Commerce in shaping international trade. Information means testing and examination of goods. Organization of assessment and examination of goods. Technology examination of goods. Hygienic, sanitary, veterinary and environmental assessment of products. Commodity forensics products. Identification and fabrication products.

Technology of storage and transportation of food. Material and technical base of storing food. Keeping goods. Storage Technology fruit. Storage Technology vegetables. Storage of meat and meat products. Storage Technology of fish and fish products. Storage Technology of milk and milk products. Storage of egg products. Storage Technology dietary fat. Production and storage of sugar. Keeping the taste of products.

Fundamentals of practical commodity. Structure of commercial enterprise. Responsibilities and organization of work of officials of commercial enterprise. Managing range and quality of different groups of food and nonfood products. Role and tasks commodity in solving socio-economic problems in market conditions.