

**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE**

**TERNOPIL VOLODYMYR HNATIUK  
NATIONAL PEDAGOGICAL UNIVERSITY**

**EDUCATIONAL AND PROFESSIONAL PROGRAM**

**“REPELLING AND PLANT QUARANTINE”**

**THE FIRST (BACHELOR) LEVEL OF HIGHER EDUCATION  
IN SPECIALTY 202 REPELLING AND PLANT QUARANTINE  
THE FIELD OF KNOWLEDGE 20 AGRARIAN SCIENCES AND FOOD  
PRODUCTS**

**QUALIFICATION: BACHELOR OF REPELLING AND PLANT  
QUARANTINE**

**CERTIFIED BY ACADEMIC COUNCIL  
THE CHAIR OF ACADEMIC COUNCIL**  
(SEAL) SIGNATURE **V. P. KRAVETS**  
(protocol no. 13 on June, 27, 2017)

Education program is adopted on September, 01, 2017  
Order no. 220 on August, 30, 2017

## **Ternopil, 2017**

### **1. Profile of the educational and professional program 202 Repelling and plant quarantine**

<b>1 - General information</b>	
<b>Full name of higher educational institution and structural unit</b>	Ternopil Volodymyr Hnatiuk National Pedagogical University, Ternopil; Faculty of Chemistry and Biology
<b>The degree of higher education and the name of the qualification in the language of the original</b>	The first level of higher education. Bachelor of Repelling and plant quarantine
<b>The official name of the educational program</b>	Educational and professional program “Repelling and plant quarantine”
<b>Type of diploma and the volume of the educational program</b>	The bachelor's degree, unitary, 240 credits ECTS, the term of study - 4 years, on the basis of junior bachelor (junior specialist) degree – the higher institution has the right to reduce the volume of the educational program, the term of training is 1 year and 10 months.
<b>Availability of accreditation</b>	–
<b>Cycle/Level of the program</b>	(NQF - national qualifications framework) of Ukraine - level 6, FQ-EHEA - first cycle, EQF-LLL - level 6
<b>Prerequisites</b>	Full secondary education, based on the results of external independent assessment (entrance examinations), diploma of a

	junior bachelor (junior specialist).
<b>Teaching languages</b>	Ukrainian
<b>The duration of the educational program</b>	5 years
<b>Internet address of the permanent description of the educational program</b>	<a href="http://tnpu.edu.ua/about/public_inform/akredytatsiia%20ta%20litsenzuvannia/202_Zahyst_karantyn_roslyn.pdf">http://tnpu.edu.ua/about/public_inform/akredytatsiia%20ta%20litsenzuvannia/202_Zahyst_karantyn_roslyn.pdf</a>

<b>2 - The purpose of the educational program</b>	
To create an educational environment for a first-level higher education student to form the general and professional competencies at the appropriate level in the fields of agrarian sciences, enabling them to gain access to employment and obtain the next level of higher education.	
<b>3 - Characteristics of the educational program</b>	
<b>Subject area (branch of knowledge, specialty, specialization)</b>	<p>Agrarian sciences;  branch of knowledge - 20 Agrarian sciences and food products;  specialty: 202 Repelling and plant quarantine  Training program includes:</p> <ul style="list-style-type: none"> <li>○ Mandatory components (175 ECTS credits, 4950 hours), including practical training (34 credits ECTS, 1020 hours);</li> <li>○ sample components (65 ECTS credits, 1950 hours).</li> </ul>
<b>Orientation of the program</b>	Educational-professional, it has applied orientation. Provides training for the implementation of the functional responsibilities of specialists in the repelling and plant quarantine; formation of readiness for self-education and professional self-improvement during a lifetime.
<b>The main focus of the educational program</b>	<p>General education in the field 20 Agrarian Sciences and Food Products.</p> <p>Integral training of a repelling and plant quarantine</p>

	<p>specialist.</p> <p>Key words: higher education, bachelor, plant repelling, plant quarantine.</p>
<b>Peculiarities of the program</b>	<p>Interdisciplinary and multidisciplinary training of specialists in the field of knowledge 20 Agrarian Sciences and Food Products.</p> <p>Provides introduction of terminological foreign vocabulary for professional orientation, conducting of separate study courses in English, international mobility. The program is implemented in an active educational environment.</p>
<b>4 - Eligibility of graduates for employment and further training</b>	
<b>Eligibility for employment</b>	<p>Types of economic activity (for QUED 009: 2010):</p> <p>01. Agriculture, hunting and related services;</p> <p>Professional types of work (according to DK 003: 2010):</p> <p>1221.1 Main agronomist for plant protection</p> <p>1221.2 Head of Plant Protection Unit</p> <p>1221.2 Chief of the test station</p> <p>2213.1 Researcher on plant protection</p> <p>2213.1 Junior research associate (agronomy, zootechnics, forestry, nature reserve)</p> <p>2213.2 Agronomist for plant protection</p> <p>2213.2 Agronomist-inspector</p> <p>2213.2 Quarantine Plant Inspector</p> <p>34.49 State Inspector of Quarantine of Plants</p> <p>3211 Laboratory worker (biological research)</p>
<b>Further training</b>	<p>Ability to study according to the program of the second (master's) level in the same specialty (which is consistent with the obtained bachelor's degree) or in another specialty (cross-entry).</p>
<b>5 - Teaching and assessment</b>	
<b>Teaching and studying</b>	<p><i>Basic approaches: student centered, activity, value; electronic, distance and self-study.</i></p> <p><i>Educational technologies: problem-developing, interactive, informational-communicative, project, contextual education.</i></p>
<b>Assessment</b>	<p>Oral and written current and final controls, defense of practice reports, defense of course work.</p>
<b>6 - Program competencies</b>	
<b>Integral competency</b>	<p>Ability to solve complex specialized problems and practical problems of professional activity in the field of repelling and plant quarantine and apply theoretical knowledge and methods of phytosanitary monitoring, review, analysis, examination, characterized by complexity and uncertainty of the conditions.</p>

<b>General competencies</b>	<p><b>GC1</b> Ability to abstract thinking, analyze and synthesize.</p> <p><b>GC2</b> Ability to apply knowledge in practical situations.</p> <p><b>GC3</b> Knowledge and understanding of the subject area and understanding of professional activity.</p> <p><b>GC4</b> Ability to communicate in the state language both verbally and in writing.</p> <p><b>GC5</b> Ability to communicate in a foreign language, ability to work in a foreign language environment.</p> <p><b>GC6</b> Skills in the use of information and communication technologies for professional activities.</p> <p><b>GC7</b> Ability to learn and apply modern knowledge.</p> <p><b>GC8</b> Ability to search, process and analyze information from various sources.</p> <p><b>GC9</b> Ability to generate new ideas (creativity).</p> <p><b>GC10</b> Ability to make informed decisions.</p> <p><b>GC11</b> Ability to work in a team.</p> <p><b>GC12</b> Ability to work in an international context.</p> <p><b>GC13</b> Skills of using psycho-communication technologies.</p> <p><b>GC14</b> Skills to perform safe activities.</p> <p><b>GC15</b> The desire to save the environment.</p>
<b>Professional competencies of the specialty</b>	<p><b>PC1</b> Ability to conduct phytosanitary diagnostics of diseases of plants, insects, ticks, nematodes, rodents and weeds according to the newest principles and methods.</p> <p><b>PC2</b> Ability to inspect regulatory objects in order to ensure compliance with phytosanitary measures in the process of their production, storage, transportation, sale during export, import, transit of products of plant origin.</p> <p><b>PC3</b> Ability to develop a forecast of the development and spread of harmful organisms, which will implement the state policy in the field of repelling and plant quarantine.</p> <p><b>PC4</b> Ability to detect, locate and eliminate regulated pests by inspection and phytosanitary expertise.</p> <p><b>PC5</b> Ability to develop and apply plant protection technologies at agricultural and other objects.</p> <p><b>PC6</b> Ability to assess phytosanitary risks (biological, ecological, economic) as a result of the introduction or spread of regulated pests.</p> <p><b>PC7</b> Ability to coordinate phytosanitary monitoring in identifying peculiarities of biology and ecology of</p>

	<p>harmful organisms in Ukraine.</p> <p><b>PC8</b> The ability to comprehensively applying methods for long-term regulation, development and spreading of harmful organisms to the economically insensitive level on the basis of the forecast, economic thresholds of harmfulness, efficiency of action of useful organisms, energy saving and environmental technologies that provide reliable plant protection and ecological safety of the environment.</p> <p><b>PC9</b> Ability to organize measures for the repelling and plant quarantine by enterprises, institutions, organizations of all forms of ownership and citizens, whose activities are related to the use of land, water objects, growing of agricultural and other purposes, their implementation, processing, storage and use.</p> <p><b>PC10</b> Ability to organize work on storage, transportation, trade and use of plant protection products.</p>
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#### 7 - Program outcomes of studying

<b>POS1</b>	To have knowledge of the fundamentals of philosophy, history and culture of Ukraine, which contribute to the development of general political culture and activity, the formation of national dignity and patriotism, socialization of personality, propensity to ethical values.
<b>POS2</b>	Understand the causal relationships of the development of society and the ability to use them in professional and social activities, apply modern scientific and technological achievements of world culture and civilization.
<b>POS3</b>	To speak Ukrainian, English and other languages.
<b>POS4</b>	To have knowledge of the fundamental sections of higher mathematics, general microbiology, biophysics, chemistry (analytical, organic, inorganic, physical and colloidal), botany and agro-zoology to the extent necessary to understand processes in the specialty of repelling and plant quarantine.
<b>POS5</b>	To be able to use statistical and mathematical methods and information technologies.
<b>POS6</b>	To have a background knowledge of the basics of genetics, breeding and seeding, microbiology, plant physiology, ecology, soil science, melioration, agrochemistry, agriculture, plant growing in the amount necessary for mastering general and specialized professional disciplines.
<b>POS7</b>	To possess, at the operational level, methods of observing, describing, identifying, classifying, cultivating agrobiocenose objects and maintaining their stability for the conservation of natural diversity.
<b>POS8</b>	To have the knowledge of professional disciplines (agrometeorology, entomology, phytopathology, mycology, fitovirusology, phytohelminthology, acarology, fundamentals of disease development,

<p>pest monitoring, plant immunity, plant quarantine basics, rodentology, herbology, phytopharmacology, phytosanitary monitoring, mechanization, electrification and automation. production, economy and entrepreneurship, management, bases of scientific research, technology of storage and processing of crop production, vegetable growing, fruit production) in volume, necessary for specialized professional work in the field of repelling and plant quarantine.</p>	
<b>POS9</b>	To be able to work independently and as a leader, as well as to achieve effective results in a limited time, to skilled design and organize technological processes for the repelling and plant quarantine.
<b>POS10</b>	To be able to compile technological cards for the organization of plant protection measures, using special knowledge on entomology, phytopathology, herbology, phytopharmacology, phytosanitary monitoring.
<b>POS11</b>	To be able to coordinate, integrate and improve the organization of production processes during plant protection activities.
<b>POS12</b>	To be able to plan time efficiently for the predicted results during repelling and plant quarantine measures.
<b>POS13</b>	To be able to work in a team and the ability to teach, monitor and evaluate the professional skills of repelling and plant quarantine workers.
<b>POS14</b>	To be able to effectively use the regulatory acts regulating the policy of repelling and plant quarantine and to respond promptly to changes in legislation.
<b>POS15</b>	To have knowledge of the observance of safe working conditions and the protection of the environment.
<p align="center"><b>8 - Resource support for the implementation of the program</b></p>	
<b>Personnel support</b>	<p>Project group: 3 doctors of sciences (2 - biological, 1 - agricultural), 1 candidate of biological sciences, associate professor.</p> <p>Guarantor of educational program: Stoliar O. B. - Doctor of Biological Sciences, professor.</p> <p>The program involves scientific and pedagogical staff with academic degrees and academic status. In order to raise the professional level, all scientific and pedagogical workers undergo an internship once in five years, including overseas</p>
<b>Material and technical support</b>	<p>Profile laboratories, offices, laboratories of integrated training, research laboratories of departments, agrobiological laboratory and educational and scientific laboratory of biology and ecology "Holytskyi Biostationary" of the university, greenhouse, herbarium, zoological museums, agricultural research centers (according to agreements).</p>
<b>Information and studying and methodological support</b>	<p>Availability of sufficient quantity of educational and methodical literature, periodicals, electronic educational-methodical complexes of educational disciplines (on the</p>

		platform of Moodle)
<b>9 - Academic mobility</b>		
<b>National Mobility</b>	<b>Credit</b>	Improvement of the qualification (internship) of scientific and pedagogical workers in the national higher educational institutes and academic institutions. Carried out by individual contracts of participants in the educational process.
<b>International Mobility</b>	<b>Credit</b>	Natural and Humanitarian University in Siedlce (Agreement of 04/17/2013 - 04/17/2018); Victor Frankel Higher Pedagogical School of Carinthia, Austria (Agreement 06.02.2009 - 01.07., 2020); Yan Dlugosh Academy in Chestohov, Poland (Agreement 10.10.2016 - unlimited).
<b>Studying of foreign applicants for higher education</b>		-

## 2. List of components of the educational and professional program and their logical consistency

### 2.1. List of components of educational and professional program

<b>Code</b>	<b>Components of the educational program (educational disciplines, course projects (work), practice, qualification work)</b>	<b>The amount of credits</b>	<b>Assessment</b>
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<b>OBJECTIVE COMPONENTS OF EDUCATIONAL PROGRAM</b>			
OC1.1.01	History of Ukrainian statehood and national culture	5	Exam
OC1.1.02	Philosophy	3	Exam
OC1.1.03	Ukrainian language (professional aim)	3	Exam
OC1.1.04	Higher Mathematics	3	Credit
OC1.1.05	Botanics	6	Credit
OC1.1.06	Microbiology with the basics of virology	4	Exam
OC1.1.07	Physics with the basics of biophysics	3	Exam
OC1.1.08	Inorganic Chemistry	4	Exam
OC1.1.09	Organic Chemistry	4	Exam
OC1.1.10	Ecology	4	Exam
OC1.1.11	Genetics with the basics of selection	4	Exam
OC1.1.12	Physiology of plants with the basics of biochemistry	6	Exam
OC1.1.13	Modern information technologies	3	Credit
OC1.1.14	Civil protection and labor protection	3	Credit
OC1.1.15	Foreign Language	5	Credit



OC2.1.01	Economics, entrepreneurship, management	3	Exam
OC2.1.02	Pedology	4	Exam
OC2.1.03	Chemical protection of plants	6	Credit, Exam
OC2.1.04	General phytopathology	4	Exam
OC2.1.05	General entomology	4	Exam
OC2.1.06	General mycology	4	Credit
OC2.1.07	Agricultural Entomology	5	Exam
OC2.1.08	Agricultural phytopathology	5	Exam
OC2.1.09	Herbology	3	Credit
OC2.1.10	Basics of plant quarantine	4	Exam
OC2.1.11	Fundamentals of Sciences. research on plant protection	4	Credit
OC2.1.12	Mechanization, electrification and automation of agriculture	7	Exam
OC2.1.13	Earth science	4	Credit
OC2.1.14	Agrochemistry	4	Exam
OC2.1.15	Fruit growing	4	Exam
OC2.1.16	Vegetable Farming	4	Exam
OC2.1.17	Plant growing	6	Exam
OC2.1.18	Selection and seed production	3	Credit
OC2.1.19	Technology of storage and processing of crop production	3	Credit
OC2.3.01	Educational practice	12	Credit
OC2.3.02	Internship	12	Credit
OC2.3.03	Course work	4	Credit
OC2.3.04	Preparation of the qualification work of the bachelor's degree	6	Defense
	<b>Total</b>	<b>175</b>	
<b>SELECTIVE COMPONENTS OF THE EDUCATIONAL PROGRAM</b>			
SC1.2.01	Science of law	2	Credit
SC1.2.02	Religious studies		
SC1.2.03	Economy	2	Credit
SC1.2.04	Logic		
SC1.2.05	Ethics and aesthetics	2	Credit
SC1.2.06	Sociology		
SC1.2.0	Latin	1	Credit

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SC1.2.08	Politology	2	Credit
SC2.2.01	Standardization and product quality management	3	Credit
SC2.2.02	Agricultural zoology	4	Credit
SC2.2.03	Analytical chemistry	4	Exam
SC2.2.04	Physical chemistry	4	Credit
SC2.2.05	Agrometeorology	4	Credit
SC2.2.06	Ticks, nematodes	5	Credit
SC2.2.07	Immunity of plants	5	Exam
SC2.2.08	General virology	4	Credit
SC2.2.09	Fundamentals of biological protection of plants from pests	4	Credit
SC2.2.10	Rodentology	3	Exam
SC2.2.11	Protecting flower, decorative and medicinal plants	4	Credit
SC2.2.12	Biotechnology and genetic engineering	4	Credit
SC2.2.13	Pest Control of agrarian cultures	4	Credit
SC2.2.14	Forecast of diseases of agrarian cultures	4	Exam
	<b>Total</b>	<b>65</b>	
	<b>GENERAL</b>	<b>240</b>	

### 3. Form of certification of higher education applicants

State certification of applicants for higher education is carried out in the form of a complex qualification exam.

The comprehensive qualification exam is aimed at establishing educational and professional qualifications and includes tasks for checking the results of training on repelling and plant quarantine.

The state certification ends with the issuance of a standard document for awarding a bachelor's degree in higher education with a qualification: a bachelor's degree in repelling and plant quarantine.