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**Project**

**“National Qualifications Framework: Guidelines  
for the Development and Recognition of  
Qualifications” (NURSLING)**

# **Guidelines**

**for the formation of the National  
Qualifications Framework for the System  
of Continuous Education of the Republic  
of Uzbekistan**

**NQF SCE RUz**

**TASHKENT – 2019**

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It contains the basic concepts and principles for the formation of the Qualifications Framework of the education system, the stages of the formation of the draft National Qualifications Framework for the Continuous Education System of the Republic of Uzbekistan based on the principles and approaches of the Qualifications Framework of the European Union countries.

It is designed for specialists of education authorities, managers and methodological services of higher educational institutions, research and expert institutions of the system of continuous education.

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## Introduction

In Uzbekistan, the **qualifications** of graduates of educational institutions are determined by State educational standards (SES). According to the Decree of the Cabinet of Ministers of the Republic of Uzbekistan No. 3 from 10.01.2015 (On Amendments and Additions to Resolution No. 343 of the Cabinet of Ministers from August 16, 2001 "On Approval of the SES HE"), the qualification requirements of the HE are separated from the SESs into a separate document (SES of 26 regions of education). **Qualification requirements** are formed for each direction of the bachelor's degree and masters degrees. The qualification system has received a more flexible form and a more capacious content, which ensures prompt and dynamic response to:

- conjuncture of the labor market,
- requirements of employers,
- Introduction of new equipment and technologies,
- Enterable features of the economy,
- change of structure and level of requirements for specialists.

The close interconnection between the system of training personnel in the world and the level of the modern world economy calls for the constant improvement of educational structures in order to prepare capable, promptly and flexibly reacting to ever increasing demands and demands of the modern economy of cadres.

It is these trends that led to the emergence in the united Europe of the concept of qualification frameworks and the rapid spread of this new idea among many EU countries, in which, according to the Bologna Declaration (1998), at the beginning of the 21 century, they began to introduce common educational programs . The obvious advantages of introducing the concept of qualification frameworks that ensure the “convertibility” of the knowledge and qualifications gained, the pan-European recognition of diplomas, and the unlimited opportunities for student and professional mobility were appreciated by many countries that wished to join this

system. As a result, the list of countries in the Bologna process began to grow steadily.

The transition to affordable qualifications frameworks has become attractive for many non-European states, which have begun to develop their qualifications frameworks based on the basic principles of the Bologna process.

The essence of the *qualifications framework* is that they formulate uniform requirements for graduates of educational institutions and educational institutions themselves, both in terms of the organization of the educational process, and in terms of the content of the proposed knowledge. All these requirements are reflected in the so-called descriptors (and in higher education - in the “Dublin descriptors”). The concept of *descriptors* can be described as “requirements”. Today there are quite a lot of descriptors in the world (in different countries from 2 to 5 and even up to 13), but in a generalized form they can be reduced to two main ones: “learning outcomes” and “competences”.

In accordance with the objectives of the NURSLING project, extensive research work was carried out and the conceptual framework of the National Qualifications Framework for the System of Continuous Education of the Republic of Uzbekistan (NQF SCE RUz) was developed, the main provisions of which are set out in this “Guideline” and “General Provisions”.

## **1. The main tasks and prerequisites for the development of National Qualifications Framework**

From the first days of independence, the Republic of Uzbekistan faces the task of embedding all spheres of the country's life activity into the world economic system. The education system is also no exception. Given the development of globalization, modern integration processes in the world, the task of integrating into the global educational space becomes even more urgent. The key to such integration for many countries over the past two decades has been the qualifications framework.

In 1997, according to the new Law of the Republic of Uzbekistan “On Education”, the process of developing state educational standards for all types of Continuous professional education began. In essence, these SES are analogous to the European

qualification framework. And the SES requirements for the graduate's knowledge and the qualifications (skills) acquired by it are analogous to the "Dublin descriptors". Given such an important factor, one can consider the existing approaches to qualifications in our country as a solid basis for the National Qualifications Framework (NQF).

**Development and implementation of qualification frameworks**, creating a common competitive environment both in obtaining qualifications and in job placement, **will allow to:**

- Evaluate a specialist in terms of skill level, learning outcomes and competence at the moment, and not by what educational institution he graduated (no matter whether it is a young worker or an adult);
- significantly expand the geography of job search and increase the chances of employment both in countries with a unified qualification framework and in foreign companies on the territory of their country;
- rank educational institutions of professional and higher education in terms of the level of demand for their personnel.

The development of the conceptual framework of the National Qualifications Framework was the main objective of our NURSLING project, for the successful implementation of which it was necessary:

- to develop the methodology for the establishment of the NQF of the SCE RUz and determine the algorithm for its implementation,
- prepare the project the NQF of the SCE RUz for **discussion and approval at the National Council - the body created under the state education management body;**
- to compare the NQF of the SCE RUz with EQF,
- To take into account the innovative transformations of the system of continuous education in Uzbekistan in the field of higher and professional education and the specific features of the educational policy of the Republic of Uzbekistan in the years of independence.

The development of the NQR SCE RUz was preceded by the development by the creative group of the corresponding concept of its creation (**or General Regulations**).

In accordance with the legislation of the Republic of Uzbekistan, the SES of Higher Education (SES HE) is the education standard that defines the qualification requirements in a particular field of education, the content of education, the necessary and sufficient level of general preparedness of graduates, the criteria for assessing the quality of personnel training. This is a regulatory act approved by government agencies, which includes a set of norms and requirements (for students, educational institutions, public and private enterprises and companies). It defines the mandatory minimum content of basic educational programs, the maximum amount of study load, the requirements for the level of knowledge and preparedness of graduates

New generation SES HE (2015) has a pronounced competence in nature. Their development is carried out under the direction of the government body of higher education - the Ministry of Higher and Secondary Special Education of the Republic of Uzbekistan (MHSSE RUz), which also approves them and presents them to the state. registration with the Agency "Uzdavstandart". The implementation of SES HE is monitored by the MHSSE of Uzbekistan, as well as by the Inspection for Education Quality Control under the Cabinet of Ministers of the Republic of Uzbekistan.

The relevant basic higher educational institutions (HEI), in conjunction with the Center for the Development of Higher and Secondary Specialized, Vocational Education at the MHSSE RUZ (CDHSSVPE), are engaged in the direct development of the SES of HE in areas of education.

## **2. Assessment of knowledge and certification**

When introducing the NQF into the education system, it is necessary to resolve the issue with the system for assessing students' knowledge. It is important that this system being adequate to the model on the basis of which the NQF will be developed.

As it is known, in the system of higher education of Uzbekistan today the rating system of assessment of students' knowledge mainly operates. In essence, this form of assessment has the character of a cumulative system of learning and controlling students' knowledge, which brings it closer to the basic principles of the credit (credit-modular) system used in most countries of the world, and especially in the countries of the Bologna process.

The credit system in higher vocational education is a mechanism for the accumulation of credit units in certain subjects, which as a result allows the student to get certified and get a diploma with a higher education degree. The credit system is a mandatory attribute of the system of higher professional education, based on qualification frameworks.

Currently, the credit system in the developed countries of the world is maximally automated. For example, the LMS-learning management system fully automates the educational process and ensures its quality and comparability. This system can ensure the continuity of monitoring and evaluation of knowledge, the accumulation of educational achievements and the mutual recognition of educational programs in various countries.

A more in-depth study of the Bologna process, features of the credit technology of education in the European educational space of higher education, made it possible, within the framework of research surveys of the NURSLING team, to understand in detail all the nuances of the qualifications framework and the credit system.

The analysis of the materials under study, relevant conclusions and developments made on this basis in the form of a model of the national credit system (“Development of a model of a system for monitoring and assessing the level of learning of the material studied or a credit system in the system of continuous

education of the Republic of Uzbekistan”) were published in Bulletin No. 1 of the NURSLING project.

Some of the recommendations and suggestions of the project participants on the credit system were taken into account when switching to the credit-modular system from September 2018 of the Tashkent University of Information Technologies. Muhammad al-Khoramiy.

### **3. Stages of formation of the National Qualifications Framework for the System of Continuous Education of the Republic of Uzbekistan**

Currently, the vast majority of countries in the world have developed national qualification systems comparable to the EQF.

As noted in the 2015 NQR Implementation Report (The European Higher Education Area in 2015: Bologna process supplementation report), the procedure for forming an NQF consists of 10 basic steps (Table 1).

Table 1

<b>№ stage</b>	<b>Stages of the formation of the NQF</b>
1	The decision to develop a NQF was taken by the national authority responsible for higher education and / or the minister..
2	Objective (s) of the NQF were agreed and outlined.
3	The process of developing the NQF has been initiated, the authorized body (s) (committee (s)) have been defined and created (s) together with the interested parties (employers).
4	The structure of educational levels, level descriptors (learning outcomes - (LO) and credit ranges (ECTS)) are agreed.
5	Consultations / discussions at the national level on the structure of the NQF, which was agreed with the stakeholders (employers), were

	conducted.
6	The NQF was adopted at the legislative or other similar high level.
7	The implementation of the NQF began with an agreement on the distribution of the role and responsibility of higher education institutions, quality assurance agencies and other bodies.
8	The training programs were revised based on the learning outcomes - (descriptors - Learning outcomes - LO) included in the NQF.
9	Qualifications were included in the NQF.
10	NQFs are certified for compatibility with the qualifications system for the European Higher Education Area - EHEA.

Considering that the goal of the NURSLING project was to create the conceptual basis of the NQF and to prepare their basic principles for further decision-making, the following activities were carried out according to the 10 stages of NQF formation:

**1. At the first stage**, a situational analysis of the project task was carried out. The opinion of participants in the educational process regarding state educational standards, the existing system of qualifications, qualification frameworks adopted in other countries, assessment systems, the effectiveness of the educational process, the quality and competence of graduates, the succession of educational programs, etc. was studied. A wide range of participants in the educational process participated in the survey. from university leaders to students, including ministerial employees, enterprises-employers, parents and b. Based on the survey carried out a comprehensive analysis of the issue, objective and subjective prerequisites, the basic foundations for the development of NQF. A more detailed analysis of the adequacy of the levels of NQF SCE RUz is given in Appendix 1.

**2. Analysis of the NQF of European countries and the CIS (Russia, Ukraine, Kazakhstan, Kyrgyzstan) countries, Dublin descriptors (see Section 2.4 of the**

"**General Regulations**"). The educational-qualification levels of different countries, the number and content of competences have been studied:

**3. Establishment of a National Coordinating Body for the NQF.** The Ministry of Higher and Secondary Specialized Education of the Republic of Uzbekistan established the Coordination Council on the National Qualification Framework of the Republic of Uzbekistan, which included specialists and managers of the system of higher professional education, representatives of employers, the economic unit, labor and employment bodies, etc. The Coordination Council considered the results of individual stages of work over the NQF, developed in the framework of the project NURSLING.

**4. Definition and justification of terms for NQF and sectoral qualification framework (SQF).** In order to unify the necessary terminology, as well as for the convenience of working with various documentation, frequently used expressions and terms on the NQF and TFR are systematized and standardized in the Glossary of Terms (see Bulletin No. 2 of the NURSLING project).

**5. Determination of skill levels based on the national education system, taking into account the European experience.** To establish the skill levels, it is necessary to analyze the existing education system in the country and determine the **signs of leveling**. The following are the signs of the separation of education levels:

- the structure of education in Uzbekistan,
- documents on education and
- labor intensity of each level in hours and in **ECTS credits**. Starting from the 2018-19 school year, a Government Decree introduced a pilot system in the credit system at the Tashkent University of Information Technologies and
- various models can be found in Bulletin No. 2 of the NURSLING project.

On the basis of the analysis of the documents on education (for example, the Law of the Republic of Uzbekistan "On Education", the State Educational Standards, the List of directions for the preparation of bachelors, masters, etc.) and the method of discussion of specialists in the field of education, **8 levels (+2 sublevels)** (see **Annex 2**).

At the same time, the tendencies in education are taken into account (for example, the introduction of the applied and research magistracy, the introduction of PhD (basic doctoral studies) and doctoral studies.

## **6. Analysis and justification of the choice of names and the number of necessary competencies.**

To implement this stage of NQF development, **we have studied and analyzed the structure and content of competencies** in NQF s of different countries. The project of the NQF RUz includes **5 competencies (Annex 3)**.

**7. The next stage should be the assessment** of the NQF of Uzbekistan: *self-assessment and evaluation by experts* (in the form of a questionnaire).

**The self-assessment** of the developed NQF is, first of all, carried out by:

- Comparisons of the NQF of the RUz with the European Qualification Framework (EQF) and the Dublin Descriptors. . Analysis of the literature shows that there are no identical stages and methods of self-certification: different participants, report formats, etc.
- Comparison and alignment of the NQF of the Republic of Uzbekistan in accordance with
  - the National Standard Classification of Occupations of the Republic of Uzbekistan (hereinafter referred to as "NSCO"),
  - the Classifier of Training Areas, Professions and Specialties of Secondary Special Professional Education (hereinafter referred to as CTAPSSSPE),
  - the Classifier of Directions and Specialties of Higher Education (hereinafter referred to as CDSHE ). and
  - the Classifier of the basic positions of employees and occupations of workers (hereinafter referred to as "CBPEOW-2015").

Below are the self-certification procedures:

- The competent national authority (s) must certify the compatibility of the national framework with the meta-framework. Comparability of the NQF of

the Republic of Uzbekistan with the qualifications framework of the European space of the EQF , and the Bologna QF-EHEA qualifications framework can be described in the following Table 2:

Table 2

<b>QF EHEA - EIIBO</b>					Short cycle		First cycle	Second cycle	Third cycle	
<b>EQF-EKP</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>		<b>6</b>	<b>7</b>	<b>8</b>	
	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
<b>NQF RUz - HKP PY<sub>3</sub></b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>4a</b>	<b>5a</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>

- The self-certification process should include the agreement of the national quality assurance authorities in the matter reflected through the Bologna process;
- The self-certification process should involve **international experts**;
- Self-certification and supporting evidence must be published and separately reflect each of the criteria set out;
- For the transparency of the qualifications of the country, the NQF should join the **ENIC** (European Network of Information Centers) and **NARIC** (Network of National Information Centers) networks, which maintain a public list of countries that have confirmed that **they have completed the self-certification process**;
- The completion of the self-certification process should be noted in the **Diploma Supplements**, reflecting the relationship between the national and European frameworks (see Bulletin No.2 of the NURSLING project).

**8. At the last stage** of development, approval of projects in the Ministry of Higher and Specialized Education of the Republic of Uzbekistan is required.

### **Analysis of the adequacy of the levels and sublevels of the NQF**

In the light of the implementation of the “Strategy for action in five areas of development of the Republic of Uzbekistan for 2017–2021,” reforms of all spheres of activity of the state and society are being implemented. Also, deep reforms are being implemented in the system of continuous education of the country (see Tables A1-1 and A1-2).

Transformation of general secondary education with the introduction of compulsory 11-year general secondary education, change of status and expansion of opportunities for secondary vocational education, the introduction of two PhD and DSc degrees - all this requires consideration when forming the NQF.

At the same time, the increase in the number of admission to universities and the direction to study in foreign countries, the opening of short-term educational programs of higher education, correspondence and evening education have significantly expanded the possibilities of lifelong education for sustainable development - adult education.

When comparing the diagrams in the composition of the NQF-4 level (equivalent to EQF-4) and the sublevel of the NQF -4a (equivalent to EQF -5), it is taken into account that the vocational education system acquires a multi-level character. In particular, it will include three fundamentally new categories of vocational educational institutions (professional colleges), PC-I, PC-II and PC-III.

In the qualification framework of the continuous education system of the NQF of the SCE of the Republic of Uzbekistan, professional colleges of the second (PC-II) and third (PC-III) categories in their status are at the level of the NQF -4 - secondary vocational education (equivalent to EQF 4), and vocational colleges of the first (PC-I) category - at the sublevel of the NQF -4a (equivalent to EQF -5).

In accordance with the objectives of the NQF -4 level, professional colleges of the second category (PC-II) provide for training specialists with specific professional qualifications, for example: electrician, electric welder, gas welder, elevator

operator, etc. Abroad, such educational institutions are usually referred to as "professional centers."

The level of the NQF -4 also includes third-class professional colleges (PC-III). They will offer more entrepreneurial-oriented knowledge (for example, on rural business).

Completely different status in vocational colleges of the first category of PC-I. As part of educational institutions of pre-university specialized secondary education, they are part of the NQF-4a sublevel (equivalent to EQF -5).

The academic process of vocational colleges of the first category is implemented in close cooperation with the corresponding undergraduate higher education institution. Educational complexes emerge on a professional basis, fruitfully using joint material, technical and technological base, laboratory and experimental equipment, as well as other educational and industrial facilities. At the same time, membership of PC-I remains at the level of pre-university secondary vocational education.

Professional colleges of the first category of PC-I are characterized by:

- two-year educational process;
- the provision (by university profile) of certain industrial specialties and corresponding practical competences;
- functioning "in harmony with the baccalaureate program", fruitfully using the material, technical and informational and scientific base of the corresponding direction of education;
- are in the sphere of influence of higher educational institutions.

Thus, in the new conditions, higher educational institutions are responsible for the educational activities of not only four levels (5–8), but also two sublevels 4a and 5a.

## Normative references

1. “National Training Program” (NPPT, 1997);
2. Law of the Republic of Uzbekistan “On Education” (1997);
3. Decree of the President of the Republic of Uzbekistan “On the Strategy for Action on the Further Development of the Republic of Uzbekistan” dated February 7, 2017, No. UP-4947;
4. Decree of the President of the Republic of Uzbekistan "On measures to fundamentally improve the system of general secondary, specialized secondary and vocational education" dated January 25, 2018 No. UP-5313;
5. Decree of the President of the Republic of Uzbekistan "On the further improvement of the system of postgraduate education" dated February 16, 2017 No. UP-4958.
6. Decree of the President of the Republic of Uzbekistan “On measures to fundamentally improve the management of the system of pre-school education” of September 30, 2017, No. UP-5198;
7. Decree of the President of the Republic of Uzbekistan "On additional measures to improve the system of public education management" dated 05.09.2018 No. UP-5538;
8. Resolution of the President of the Republic of Uzbekistan "On measures to further improve the activities of educational institutions of secondary special and vocational education” dated March 14, 2017 No. PP-2829;
9. Decree of the President of the Republic of Uzbekistan "On measures to further improve the system of training teachers, retraining and advanced training of public education workers" dated September 26, 2017, No. PP-3289;
10. Decree of the President of the Republic of Uzbekistan "On the organization of activities of the Ministry of Pre-school Education of the Republic of Uzbekistan" dated September 30, 2017 No. PP-3305

11. Decree of the President of the Republic of Uzbekistan "On additional measures to improve the system of monitoring the quality of education" dated January 16, 2019 No. PP-4119;

12. Decree of the President of the Republic of Uzbekistan "On additional measures to improve the quality of education in higher educational institutions and ensure their active participation in the large-scale reforms implemented in the country" dated 05.06.2018, No. PP-3775;

13. Decree of the President of the Republic of Uzbekistan "On the organization of special correspondence departments for teaching directions in higher educational institutions" dated 09.08.2017, number PP-3183;

14. Decree of the President of the Republic of Uzbekistan "On measures for the further development of the higher education system" dated April 20, 2017 No. PP-2909;

15. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan "On the organization of the activities of the State Inspectorate for the Supervision of the Quality of Education under the Cabinet of Ministers of the Republic of Uzbekistan" dated July 18, 2017 No. 515;

16. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan "On measures for further improvement of the system of post-graduate education" dated 05.22.2017, No. 304;

17. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan "On measures to improve post-graduate education and the system of certification of scientific and scientific-pedagogical personnel of higher qualification" No. 365 of December 28, 2012;

18. No. 343 of the Cabinet of Ministers adopted on August 16, 2001 "On approval of the higher education standards", No. 3, 01/10/2015, Collection of Laws Uzbekistan, 2015, No. 2, pg. 21;

19. O'zDSt 6.01.2: 2007. Unified system of classification and coding of technical, economic and social information of the Republic of Uzbekistan. The procedure for the development and maintenance of classifiers;

20. O'z DT 008: 2000. National Standard Classifier of Occupations of the Republic of Uzbekistan;

21. O'zDSt 1007: 2012. State educational standard of higher education. Classifier of directions and specialties of higher education;

22. State educational standard of secondary special and vocational education. Classifier of training areas, professions and specialties of secondary special and vocational education, 2015;

23. International Standard Classification of Occupations (ISCO-88);

24. International Standard Classification of Education (ISCED), UNESCO, 2015.

Education system in Uzbekistan

Table A1-1

Structure of system of continuous education of Uzbekistan (SCE RUz)-2016								
Type of education	VI. Out school				IV. Higher		V. Postgraduate	
	I. Pre-school	II.Full secondary		III.Secondary special vocational	Bachelor HE	Master HE	Graduat School PhD	Doctorate
		Prime secondary IV	Seconda IV					
Early learning age	4 years	6-7 years	10-11 years	15-16 years	18-19 years	22-23 years	24-25 years	27-28 years
Standard term of study	3-4 years	4 years	5 years	3 years	4 years	2 years	3 years	3 years
		4+5=9 years			4+2=6 years		3+3=6 years	
		VII In-service training and personnel retraining system						

Table A1-2

Structure of the system of continuous education of the RUz (as of 2019)										
Comparison of NQF SCE RUz and EQF										
3 years	4 years	5 years	2 years		2 years	3-6 years	2 или 3 years	3 years	3 years	
<i>Pre-school education</i>	<i>Primary education</i>	<i>General secondary</i>	<i>11 years schools, Special SIE schools of inclusive</i>	<i>Vocational colleges- type II, profession</i>	<i>zero preparatory courses specialized schools of gifted children</i> <i>AL at HEI → на базе</i>	<i>Undergraduate</i> ←	<i>Master's Courses</i> ←	<i>Basic doctorate</i>	<i>Doctoral studies</i>	<i>In-service training and personnel retraining system</i> <i>Adult education СИПК и ППК</i>
Pr eS E.	P E →	GS E →	FGS E →	SVE →	PreUnSSE ↔	B HE ↕↕	M HE ↕↕	BD PG↕↕ →	D PG ↓	
			<b>Working activities →</b>							
NQF RUz - National Qualification Framework of the Republic of Uzbekistan										
1 level	2 level	3 level	4 level	4a level	5 level	6 level	7 level	8 level	5a level	
EQF – European Qualification Framework										
1 level	2 level	3 level	4 level	5 level	6 level	7 level	8 level	5 level		

## ANNEX 2

EDUCATIONAL-QUALIFICATION LEVELS IN RUz

Table A2-1

<b>1</b>	Pre-school education and upbringing
<b>2</b>	Primary education, General secondary education (9 years old schools)
<b>3</b>	Full General secondary education
<b>4</b>	Secondary vocational education
<b>4a</b>	Pre-university specialized secondary education
<b>5</b>	HE-Undergraduate
<b>5a</b>	In-service training and personnel retraining system
<b>6</b>	HE- Master's level
<b>7</b>	Basic Doctorate (eq. PhD)
<b>8</b>	Doctoral - Postgraduate Education
<b>8 levels(+2 sublevels)</b>	

Table A2-2

## Сравнение НПК CHO РУз с ЕРК - Comparison of NQF RUz with EQF

ЕКР EQF	НПК NQF	Виды образования в Узбекистане Types of education in Uzbekistan
1	1	Дошкольное воспитание и образование (ДВиО) Pre-school education and upbringing (PreSchE)
	2	Начальное образование (НО) Primary education (PE)
2		Общее среднее образование (до 9 класса) (ОСО) General secondary education (9 years old schools) (GSE)
3	3	Полное общее среднее образование (ПОСО): Full General secondary education (FGSE): -11 летняя школа, -11 years old school, -Специализированные школы инклюзивного образования (СШИО) -Specialized schools of inclusive education (SSiE)
4	4	Среднее профессиональное образование (СПО): Secondary vocational education (SVE): -профессиональные колледжи II и III типа (ПК-II,III) -professional colleges of II and III types (PC-II,III)
5	4a	Довузовское среднее специальное образование (ДоВССО): Pre-university specialized secondary education(PreUnSSE): - Подготовительные курсы (нулевые)при вузах(НпК), - Preparatory courses (zero-year) at universities (ZpC), -Академический лицей при вузах (АЛ), -Academic lyceum at universities (AL), -профессиональные колледжи I типа на базе бакалавриата (ПК-I) -professional colleges type I based on Bachelor degree (PC-I) -Специализированные школы одаренных детей (СШоД) - Special schools of gifted children (SSgCh)
	5a	Система переподготовки кадров и повышения их квалификации Образование взрослых In-service training and personnel retraining system Adult education
6	5	ВО-Бакалавриат HE- Bachelor
7	6	ВО-Магистратура HE- Master's level
8	7	Базовая докторантура Basic Doctorate (eq. PhD)
	8	Докторантура Doctoral - Postgraduate Education

Table A2-3

**A correspondence scheme for “knowledge”, “skills” and “competencies” between the European and Uzbek qualifications framework**

Matching scheme for "knowledge" between the European and Uzbek frameworks of qualifications			
No levels	On the EQF	No levels	On the Uzbek Qualifications Framework
I.	Basic general knowledge	I.	Interest in universal human values through tales and stories
		II.	Learned knowledge: the basics of basic subjects, the most important natural science facts, the universal human and cultural-historical heritage of the people and the country.
II.	Basic factual knowledge of a field of work or study	III.	Learned knowledge: phenomena, theorems, principles, facts, general principles of sciences and concepts of the disciplines of the basic subjects of the curriculum; methods, rules, tools and recommendations for solving typical problems and practical tasks
III.	Knowledge of facts, principles, processes and general concepts, in a field of work or study		
IV	Factual and theoretical knowledge in broad contexts within a field of work or study	IV.	Learned: basic theoretical positions and knowledge of academic disciplines at the level that provides the opportunity for further graduate professional training; practical knowledge of the specifics of future work; moderately profound professional-oriented knowledge; well-known national and universal cultural and intellectual values. Primary knowledge necessary for stable work in elementary professional positions.
V.	Comprehensive, specialized, factual and theoretical knowledge within a field of	IV-A	Learned: knowledge of the basic academic provisions of academic disciplines at the level that guarantees the continuation of further educational process in higher education; knowledge of the most famous national and universal cultural and intellectual wealth and values.
		V-A	<u>Regarding retraining-</u> Learned: Academic knowledge of additional specialization, profession or additional direction of education in accordance with their state educational standards.

	work or study and an awareness of the boundaries of that knowledge		<u>In-service training - Learned:</u> New, advanced, relevant, innovative knowledge, basic ideas and current problems in the field of their professional activities.
VI.	Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	V.	Learned: - basic academic terms and knowledge of a wide range of academic disciplines; - the knowledge defining interdisciplinary relations and mutual additions of academic disciplines; -knowledge of the main scientific problems of their field of research and scientists, successfully and fruitfully promoting their scientific research; -knowledge of the fundamentals of professional disciplines, relevant to the state standards of undergraduate and ensuring the possibility of further professional education or future successful work -knowledge of basic ideas, problems and ways of their possible solutions in the framework of the study
VII	Highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research	VI.	Learned: - deepening knowledge and understanding of the fundamental sciences of their field of study, as well as going beyond the academic program of a wide range of related to the field of study of sciences; - knowledge of the main ideas, problems and ways of their possible solutions, allowing to show originality in the development and application of research ideas; - the knowledge allowing independently to solve the new unfamiliar interdisciplinary problems connected by the specialty..
VIII	Knowledge at the most advanced frontier of a field of work or study and at the interface between fields	VII.	Learned: - knowledge, understanding and the ability to think, design, implement and adapt the current research process with academic integrity; - knowledge and understanding, which allowed through original scientific research to contribute to the expansion of knowledge, substantially develop the previously obtained research results, some of which became materials of peer-reviewed national and international publications

	<i>Doctor of science - Доктор наук</i> в EQF is absent	VIII.	Demonstrates - knowledge and systematic understanding of the problems of their professional sphere, as well as related sciences; -demonstrated the ability to perceive deeper knowledge, skills in solving the deep and unexplored problems of their professional sphere and related industries; - deep integrated knowledge, allowing on the basis of limited information to solve complex issues and develop scientifically based formulations on them.
<b>Matching scheme for "skills" between the European and Uzbek frameworks of qualifications</b>			
№ levels	<b>On the EQF</b>	№ levels	<b>On the Uzbek Qualifications Framework</b>
I.	basic skills required to carry out simple tasks	I.	Has mastered the need for constant systematic training, learned elements of spiritual and moral development and behavior
		II.	Based on curriculum materials, he owns: Reading and writing skills , expression of thoughts, solving typical problems.
II.	Basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools		
III.	A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information	III.	Based on curriculum materials, he owns: -cognitive and practical skills of solving problems; -methods, rules, recommendations and tools needed to perform tasks and solve problems at the level of the requirements of the State Educational Standards of the GSE
IV	A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	IV.	Based on the curriculum materials: - owns a set of cognitive and practical skills necessary to find solutions to specific problems in the field of work or further professional training; - owns cognitive and practical skills in a voluntarily chosen profession; - possesses the abilities necessary for future active work.
V.		IV-	Based on the curriculum materials:

	A comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	A	<ul style="list-style-type: none"> <li>- owns professional and academic skills of practical application of the generated knowledge;</li> <li>- owns at a sufficiently high level the methods of applying primary knowledge that ensures performance in elementary professional positions within the framework of the future university specialization.</li> </ul>
		V-A	<u>Retraining- Based on the curriculum materials:</u> <ul style="list-style-type: none"> <li>- owns the skills and methods of applying professional and academic knowledge of additional specialization, profession or additional direction of education.</li> </ul> <u>In-service training -Based on the curriculum materials:</u> <ul style="list-style-type: none"> <li>- owns the skills and methods of applying new, advanced, relevant, innovative knowledge, basic ideas and modern problems in their professional activities.</li> </ul>
VI.	Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	V.	<p>Based on the curriculum materials:</p> <ul style="list-style-type: none"> <li>- owns the skills and methods of application of basic academic positions and knowledge of academic disciplines, as well as the application in everyday professional activities of the main scientific problems of their field of study;</li> <li>- owns the skills and methods of applying the fundamental knowledge of his field of study when performing scientific research or professional work activities;</li> <li>- owns skills and methods of knowledge accounting, determining interdisciplinary interrelations and mutual complements of various related to the field of study of sciences, as well as the application of basic ideas, problems and ways of their possible solutions within the field of study;</li> <li>- owns sufficient learning abilities to develop the necessary knowledge to continue studying with a high degree of autonomy;</li> <li>- owns a wide range of cognitive and practical skills necessary to develop creative solutions to abstract problems / tasks, reflecting high professionalism and competence;</li> <li>- has the ability in the field of study to discuss ideas, problems and solutions with both specialists and non-specialists.</li> </ul>
VII	Critical awareness of knowledge issues in a field and at the interface between different fields specialised problem-solving skills required in research and/or innovation in order to develop new	VI.	<p>Based on curriculum materials and dissertation research topics:</p> <ul style="list-style-type: none"> <li>- owns the skills and methods of applying the deepening knowledge and understanding of the fundamental sciences of his field of study, as well as a wide range of related to the field of study of scientific problems;</li> <li>- owns the methods and methodology of research activities, is able to clearly and</li> </ul>

	knowledge and procedures and to integrate knowledge from different fields		consistently communicate to the experts and non-specialists their conclusions and used for their formulation, knowledge and justification; - owns deeper skills of his specialty, allowing to continue learning largely independently and autonomously, is able to collect and interpret meaningful data from the field of study, has the ability to discuss research, ideas, problems and solutions.
VIII	the most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice <i>Doctor of science in EQF is absent</i>	VII.	On the topic of dissertation research: - masterfully owns the methods and skills of research in his scientific field; - owns ways of integrating knowledge and solving complex issues, ways of scientific judgment formulation; - owns the ways of recognizing the problem and their scientific selection of their professional sphere; understand - owns the methods of expansion, distribution and implementation of research results and scientific achievements, developed the skills to present their research in the form of scientific works..
		VIII.	In research activities demonstrates: - owns perfectly the methods of mastering and developing new knowledge, a systematic understanding of the problems of their professional sphere, as well as related sciences; - has the ability to use deeper knowledge and skills in solving unusual problems and developing interpretations of observed phenomena; - owns methods for solving complex issues and developing scientifically based formulations based on deep integrated knowledge; - fluently owns the necessary methods and skills to organize and conduct research, the ability to independently solve new unfamiliar interdisciplinary problems, to develop and apply original research ideas related to their professional sphere and significantly expanding the scope of existing knowledge and understanding.

**Matching scheme for "competences" between the European and Uzbek frameworks of qualifications**

№ level s	<b>On the EQF</b>	№ levels	<b>On the Uzbek Qualifications Framework</b>
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I.	work or study under direct supervision in a structured context	I.	Owns the skills to use the tools of the educational process: keep a pen and a pencil, be careful with books, perceive the lesson as a need for self-improvement
II.	work or study under supervision with some autonomy	II.	According to the materials of the curriculum is capable to some extent: - autonomously work and learn; - perform relatively simple tasks and solve typical tasks; - use simple working tools and apply some learned basic professional knowledge and skills in practical situations.
III.	take responsibility for completion of tasks in work or study; adapt own behaviour to circumstances in solving problems	III.	According to the curriculum materials and the requirements of the SES of the FSE Able to independently carry out educational tasks in subjects at the level of the requirements of the SES of the FSE; Able to balanced and deliberate actions in certain age situations and circumstances
IV	exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change; supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities	IV.	Based on the curriculum materials and the requirements of the SES of the VSE: - able to fulfill the basic academic and professional qualification requirements stipulated by the SES of the VSE: - able to apply all the necessary professional skills in the voluntarily chosen specialties (professions); - is able to competently use in his work activity the main types of modern mechanisms and tools from the arsenal of the relevant specialty
V.	exercise management and supervision in contexts of work or study activities where there is unpredictable change; review and develop performance of self and others	IV-A	Based on the curriculum materials: - able to apply formed intellectual, professional and academic knowledge and skills; - is able to apply and use the entire arsenal of methods and primary knowledge that ensures performance in elementary professional positions within the framework of the future university specialization.
V-A		<b>Retraining</b> Based on the curriculum materials: - able to solve practical problems and academic problems of additional specialization, profession or additional direction of education to apply the formed skills, methods and academic knowledge <b>In-service training.</b> Based on the curriculum materials: - is capable of solving new, advanced, relevant, innovative knowledge, basic ideas and contemporary problems in the field of their professional activities	

			when solving practical problems and academic problems.
VI.	manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts; take responsibility for managing professional development of individuals and groups	V.	Based on the curriculum materials: - able to apply basic academic positions and knowledge, as well as the main scientific problems and fundamental knowledge of his field of study, in his work or research activities; - able to take into account the knowledge that determines the interdisciplinary relationships and mutual additions of various kindred to the field of study of sciences, as well as apply basic ideas, methods for solving problems - able to develop the necessary knowledge to continue learning with a high degree of autonomy; - owns sufficient learning abilities to; - able to show high professionalism and competence in the development of creative solutions to abstract problems / tasks; - is able to discuss ideas, problems and their solutions with both specialists and non-specialists, is able to formulate and justify arguments and solutions to problems in the field of study.
VII.	manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches; take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams	VI.	Based on curriculum materials and dissertation research topics: - able to apply and deepen the knowledge and understanding of the basic sciences of his field of study, as well as a wide range of related to the field of study of scientific problems; - is able to apply the methods and methodology of research activities in the formulation of knowledge, research results and their rationale, to clearly and consistently communicate their scientific findings and views on the problem under investigation to specialists and non-specialists; used for their wording, knowledge and justification; - is able to apply knowledge in his specialty to continue his studies largely independently and autonomously, is able to collect and interpret meaningful data from the field of study and discuss research, ideas, problems and solutions.
VIII	demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new	VII.	On the topic of dissertation research: - is able to apply the methods and methodology of scientific research in his scientific field for integrating knowledge and solving complex issues, as well as in formulating judgments;

	<p>ideas or processes at the forefront of work or study contexts including research</p> <p><i>Doctor of science – in EQF is absent</i></p>	<ul style="list-style-type: none"> <li>- able to recognize problems, as well as carry out their scientific selection in order to select only the necessary data, as well as promote into society within academic and professional contexts, technological, social or cultural knowledge;</li> <li>- is able to expand, disseminate and implement the results of research and scientific achievements, to present his research competently and scientifically in the form of scientific works, and also to communicate in his professional sphere with experts, a large academic community and with society in general;</li> <li>- Is capable of critically interpreting research and related issues, as well as managing and modifying work contexts that require new unpredictable strategic approaches.</li> </ul>
		<p>VIII.</p> <p>In research activities demonstrates:</p> <ul style="list-style-type: none"> <li>- the ability to perfectly develop new knowledge, systematically understand the problems of their professional sphere, as well as related sciences;</li> <li>- the ability to use deeper knowledge and skills in solving unusual problems and developing interpretations of observed phenomena;</li> <li>- the ability to solve complex issues and develop scientifically based formulations based on deep integrated knowledge</li> <li>-the ability to fluently possess the necessary methods and skills to organize and conduct research, independently solve new unfamiliar interdisciplinary problems, develop and apply original research ideas related to their professional field and significantly expanding the scope of existing knowledge and understanding;</li> <li>- able to promote, within academic and professional contexts, technological, scientific, social or cultural development in the interest of creating a knowledge-based society;</li> <li>- able to communicate on the subject of his field and competence with equal status colleagues, as well as the wide scientific community and society;</li> <li>- able to educate a new generation of researchers who are able to continue and further develop the research begun; original and creative research,</li> <li>- able to show, if necessary, high authority, autonomous and innovative thinking, scientific and professional qualities, as well as a steady commitment to the development of new ideas or processes in various advanced fields, including research..</li> </ul>

## The structure and content of the descriptors of all 8 levels and 2 sublevels of the NQF SCE RUz

Table A3-1

	<b>Knowledge</b>	<b>Skills</b>	<b>Competences</b>
I.	Interest in universal human values through tales and stories	Has mastered the need for constant systematic training, learned elements of spiritual and moral development and behavior	Owns the skills to use the tools of the educational process: keep a pen and a pencil, be careful with books, perceive the lesson as a need for self-improvement
II.	Learned knowledge: the basics of basic subjects, the most important natural science facts, the universal human and cultural-historical heritage of the people and the country.	Based on curriculum materials, he owns: Reading and writing skills , expression of thoughts, solving typical problems.	According to the materials of the curriculum is capable to some extent: - autonomously work and learn; - perform relatively simple tasks and solve typical tasks; - use simple working tools and apply some learned basic professional knowledge and skills in practical situations.
III.	Learned knowledge: phenomena, theorems, principles, facts, general principles of sciences and concepts of the disciplines of the basic subjects of the curriculum; methods, rules, tools and recommendations for solving typical problems and practical tasks	Based on curriculum materials, he owns: -cognitive and practical skills of solving problems; -methods, rules, recommendations and tools needed to perform tasks and solve problems at the level of the requirements of the State Educational Standards of the GSE	According to the curriculum materials and the requirements of the SE S of the FSE  Able to independently carry out educational tasks in subjects at the level of the requirements of the SE S of the FSE;  Able to balanced and deliberate actions in certain age situations and circumstances
IV.	Learned: basic theoretical positions and knowledge of academic disciplines at the level that	Based on the curriculum materials: - owns a set of cognitive and practical skills necessary to find solutions to specific problems in the field of work	Based on the curriculum materials and the requirements of the SES of the VSE: - able to fulfill the basic academic and professional qualification requirements stipulated

	<p>provides the opportunity for further graduate professional training;  practical knowledge of the specifics of future work;  moderately profound professional-oriented knowledge;  well-known national and universal cultural and intellectual values.  Primary knowledge necessary for stable work in elementary professional positions.</p>	<p>or further professional training;  - owns cognitive and practical skills in a voluntarily chosen profession;  - possesses the abilities necessary for future active work.</p>	<p>by the SES of the VSE:  - able to apply all the necessary professional skills in the voluntarily chosen specialties (professions);  - is able to competently use in his work activity the main types of modern mechanisms and tools from the arsenal of the relevant specialty</p>
IV-A	<p>Learned:  knowledge of the basic academic provisions of academic disciplines at the level that guarantees the continuation of further educational process in higher education;  knowledge of the most famous national and universal cultural and intellectual wealth and values.</p>	<p>Based on the curriculum materials:  - owns professional and academic skills of practical application of the generated knowledge;  - owns at a sufficiently high level the methods of applying primary knowledge that ensures performance in elementary professional positions within the framework of the future university specialization.</p>	<p>Based on the curriculum materials:  - able to apply formed intellectual, professional and academic knowledge and skills;  - is able to apply and use the entire arsenal of methods and primary knowledge that ensures performance in elementary professional positions within the framework of the future university specialization.</p>
V-A	<p><u>Regarding retraining- Learned:</u>  Academic knowledge of additional specialization, profession or additional direction of education in accordance with their state educational standards.  <u>In-service training - Learned:</u>  New, advanced, relevant, innovative knowledge, basic ideas</p>	<p><u>Retraining- Based on the curriculum materials:</u>  - owns the skills and methods of applying professional and academic knowledge of additional specialization, profession or additional direction of education.  <u>In-service training -Based on the curriculum materials:</u></p>	<p><b>Retraining</b> Based on the curriculum materials:  - able to solve practical problems and academic problems of additional specialization, profession or additional direction of education to apply the formed skills, methods and academic knowledge  <u>In-service training.</u> Based on the curriculum materials:  - is capable of solving new, advanced, relevant, innovative knowledge, basic ideas and</p>

	and current problems in the field of their professional activities.	- owns the skills and methods of applying new, advanced, relevant, innovative knowledge, basic ideas and modern problems in their professional activities.	contemporary problems in the field of their professional activities when solving practical problems and academic problems.
V.	<p>Learned:</p> <ul style="list-style-type: none"> <li>- basic academic terms and knowledge of a wide range of academic disciplines;</li> <li>- the knowledge defining interdisciplinary relations and mutual additions of academic disciplines;</li> <li>-knowledge of the main scientific problems of their field of research and scientists, successfully and fruitfully promoting their scientific research;</li> <li>-knowledge of the fundamentals of professional disciplines, relevant to the state standards of undergraduate and ensuring the possibility of further professional education or future successful work</li> <li>-knowledge of basic ideas, problems and ways of their possible solutions in the framework of the study</li> </ul>	<p>Based on the curriculum materials:</p> <ul style="list-style-type: none"> <li>- owns the skills and methods of application of basic academic positions and knowledge of academic disciplines, as well as the application in everyday professional activities of the main scientific problems of their field of study;</li> <li>- owns the skills and methods of applying the fundamental knowledge of his field of study when performing scientific research or professional work activities;</li> <li>- owns skills and methods of knowledge accounting, determining interdisciplinary interrelations and mutual complements of various related to the field of study of sciences, as well as the application of basic ideas, problems and ways of their possible solutions within the field of study;</li> <li>- owns sufficient learning abilities to develop the necessary knowledge to continue studying with a high degree of autonomy;</li> <li>- owns a wide range of cognitive and practical skills necessary to develop</li> </ul>	<p>Based on the curriculum materials:</p> <ul style="list-style-type: none"> <li>- able to apply basic academic positions and knowledge, as well as the main scientific problems and fundamental knowledge of his field of study, in his work or research activities;</li> <li>- able to take into account the knowledge that determines the interdisciplinary relationships and mutual additions of various kindred to the field of study of sciences, as well as apply basic ideas, methods for solving problems</li> <li>- able to develop the necessary knowledge to continue learning with a high degree of autonomy;</li> <li>- owns sufficient learning abilities to;</li> <li>- able to show high professionalism and competence in the development of creative solutions to abstract problems / tasks;</li> <li>- is able to discuss ideas, problems and their solutions with both specialists and non-specialists, is able to formulate and justify arguments and solutions to problems in the field of study.</li> </ul>

		creative solutions to abstract problems / tasks, reflecting high professionalism and competence; - has the ability in the field of study to discuss ideas, problems and solutions with both specialists and non-specialists.	
VI.	<p>Learned:</p> <ul style="list-style-type: none"> <li>- deepening knowledge and understanding of the fundamental sciences of their field of study, as well as going beyond the academic program of a wide range of related to the field of study of sciences;</li> <li>- knowledge of the main ideas, problems and ways of their possible solutions, allowing to show originality in the development and application of research ideas;</li> <li>- the knowledge allowing independently to solve the new unfamiliar interdisciplinary problems connected by the specialty..</li> </ul>	<p>Based on curriculum materials and dissertation research topics:</p> <ul style="list-style-type: none"> <li>- owns the skills and methods of applying the deepening knowledge and understanding of the fundamental sciences of his field of study, as well as a wide range of related to the field of study of scientific problems;</li> <li>- owns the methods and methodology of research activities, is able to clearly and consistently communicate to the experts and non-specialists their conclusions and used for their formulation, knowledge and justification;</li> <li>- owns deeper skills of his specialty, allowing to continue learning largely independently and autonomously, is able to collect and interpret meaningful data from the field of study, has the ability to discuss research, ideas, problems and solutions.</li> </ul>	<p>Based on curriculum materials and dissertation research topics:</p> <ul style="list-style-type: none"> <li>- able to apply and deepen the knowledge and understanding of the basic sciences of his field of study, as well as a wide range of related to the field of study of scientific problems;</li> <li>- is able to apply the methods and methodology of research activities in the formulation of knowledge, research results and their rationale, to clearly and consistently communicate their scientific findings and views on the problem under investigation to specialists and non-specialists; used for their wording, knowledge and justification;</li> <li>- is able to apply knowledge in his specialty to continue his studies largely independently and autonomously, is able to collect and interpret meaningful data from the field of study and discuss research, ideas, problems and solutions.</li> </ul>
VII.	<p>Learned:</p> <ul style="list-style-type: none"> <li>- knowledge, understanding and the ability to think, design,</li> </ul>	<p>On the topic of dissertation research:</p> <ul style="list-style-type: none"> <li>- masterfully owns the methods and skills of research in his scientific</li> </ul>	<p>On the topic of dissertation research:</p> <ul style="list-style-type: none"> <li>- is able to apply the methods and methodology of scientific research in his scientific field for</li> </ul>

	<p>implement and adapt the current research process with academic integrity;</p> <ul style="list-style-type: none"> <li>- knowledge and understanding, which allowed through original scientific research to contribute to the expansion of knowledge, substantially develop the previously obtained research results, some of which became materials of peer-reviewed national and international publications</li> </ul>	<p>field;</p> <ul style="list-style-type: none"> <li>- owns ways of integrating knowledge and solving complex issues, ways of scientific judgment formulation;</li> <li>- owns the ways of recognizing the problem and their scientific selection of their professional sphere; understand</li> <li>- owns the methods of expansion, distribution and implementation of research results and scientific achievements, developed the skills to present their research in the form of scientific works..</li> </ul>	<p>integrating knowledge and solving complex issues, as well as in formulating judgments;</p> <ul style="list-style-type: none"> <li>- able to recognize problems, as well as carry out their scientific selection in order to select only the necessary data, as well as promote into society within academic and professional contexts, technological, social or cultural knowledge;</li> <li>- is able to expand, disseminate and implement the results of research and scientific achievements, to present his research competently and scientifically in the form of scientific works, and also to communicate in his professional sphere with experts, a large academic community and with society in general;</li> <li>- Is capable of critically interpreting research and related issues, as well as managing and modifying work contexts that require new unpredictable strategic approaches.</li> </ul>
VIII.	<p>Demonstrates</p> <ul style="list-style-type: none"> <li>- knowledge and systematic understanding of the problems of their professional sphere, as well as related sciences;</li> <li>-demonstrated the ability to perceive deeper knowledge, skills in solving the deep and unexplored problems of their professional sphere and related industries;</li> <li>- deep integrated knowledge, allowing on the basis of limited information to solve complex issues and develop scientifically</li> </ul>	<p>In research activities demonstrates:</p> <ul style="list-style-type: none"> <li>- owns perfectly the methods of mastering and developing new knowledge, a systematic understanding of the problems of their professional sphere, as well as related sciences;</li> <li>- has the ability to use deeper knowledge and skills in solving unusual problems and developing interpretations of observed phenomena;</li> <li>- owns methods for solving complex issues and developing scientifically based formulations based on deep</li> </ul>	<p>In research activities demonstrates:</p> <ul style="list-style-type: none"> <li>- the ability to perfectly develop new knowledge, systematically understand the problems of their professional sphere, as well as related sciences;</li> <li>- the ability to use deeper knowledge and skills in solving unusual problems and developing interpretations of observed phenomena;</li> <li>- the ability to solve complex issues and develop scientifically based formulations based on deep integrated knowledge</li> <li>-the ability to fluently possess the necessary methods and skills to organize and conduct research, independently solve new unfamiliar interdisciplinary problems, develop and apply original research ideas related to their professional field and significantly expanding the scope of existing knowledge and understanding;</li> </ul>

	<p>based formulations on them.</p>	<p>integrated knowledge;  - fluently owns the necessary methods and skills to organize and conduct research, the ability to independently solve new unfamiliar interdisciplinary problems, to develop and apply original research ideas related to their professional sphere and significantly expanding the scope of existing knowledge and understanding.</p>	<ul style="list-style-type: none"> <li>- able to promote, within academic and professional contexts, technological, scientific, social or cultural development in the interest of creating a knowledge-based society;</li> <li>- able to communicate on the subject of his field and competence with equal status colleagues, as well as the wide scientific community and society;</li> <li>- able to educate a new generation of researchers who are able to continue and further develop the research begun; original and creative research,</li> <li>- able to show, if necessary, high authority, autonomous and innovative thinking, scientific and professional qualities, as well as a steady commitment to the development of new ideas or processes in various advanced fields, including research..</li> </ul>
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