Ministry of Education and Science of Ukraine
The state higher educational institution
«Ukrainian State University of Chemical Technology»

Rector SHEI USCTU
_____A.A. Pivovarov
«____»_____2017

EDUCATIONAL-PROFESSIONAL PROGRAM

Automation and computer-integrated technologies
(the name of the educational program)

The second (master's) level
(name of the level of higher education)

Master
(name of the degree to be assigned)

FIELD OF STUDY **15 Automation and instrument makihg**
(cipher and name of the field of knowledge)

SPECIALTY **151 Automation and computer-integrated technologies**
(the code and the name of the specialty)

Approved at the meeting of the
Academic Council SHEI USCTU
from «_____»_____2017
protocol №____

Dnipro
2017

Letter of approval

EDUCATIONAL PROFESSIONAL PROGRAM

Higher education level	The second (master's) level
Field of study	15 Automation and instrument makihg
Specialty	151 Automation and computer-integrated technologies
Specialization	-
«AGREED »	« DEVELOPERS»
The first vice-rector, the head of the scientific and methodical council of the SHEI USCTU _____ Goleus V.I. (signature) (surname and initials) „_____”_____2016	Project team leader _____ Taranenko Y.K. (signature) (surname and initials) „_____”_____2016
Head of the NSC _____ Smotraev R.V. (signature) (surname and initials) „_____”_____2016	Project team members _____ Trishkin V.Ya. (signature) (surname and initials) „_____”_____2016
Scientific-methodical department _____ Fomenko G.V. (signature) (surname and initials) „_____”_____2016	_____ Manko G.I. (signature) (surname and initials) „_____”_____2016
Dean of the Faculty KN and I _____ Левчук І.Л. (signature) (surname and initials) „_____”_____2016	
Head of Department _____ Taranenko Y.K. (signature) (surname and initials) „_____”_____2016	

I. PROFILE OF THE EDUCATIONAL PROFESSIONAL PROGRAM OF MASTER TRAINING
from the specialty *151 Automation and computer-integrated technologies*

Program profile (general information)	
The full name of qualification a source language	Magistr degree, program subject area - Automation and computer-integrated technologies
The official name of educational program	Educational-professional program «Automation and computer-integrated technologies» program subject area 151 Automation and computer-integrated technologies
Type of diploma and volume of educational program	The diploma of the master in Automation and computer-integrated technologies, simple (double, over-all at presence of the corresponding contracts, programs of instruction); 90 credits ЄКТС
The full name of the institution of higher education, which qualifies	Ukrainian State University of Chemical Technology
Accrediting organization	Accreditation Commission of Ukraine (DUU "Educational and Methodological Center for Quality of Education"). DESTINY.
The period of accreditation	The validity period of the certificate after the initial accreditation is 5 years, after repeated - 10 years.
Cycle / level	NRC Ukraine – 7 level, FQ-EHEA – the second cycle, EQF-LLL – 7 level
Preconditions	The first (baccalaureate) level
Language (s) instruction	Ukrainian
А	**The purpose of educational program**
The purpose of educational program	To provide students with the knowledge, skills and understanding in the field of automation and instrumentation, which will enable them to perform original scientific research or work independently in production.
Б	**The characteristic of educational program**
Subject area (Field of study, program subject area)	Field of study *15 – Automation and instrument makihg* program subject area *151 – Automation and computer-integrated technologies*
The basic focus of the program and specialization	Over-all higher education in the field of automation and instrumentation technologies.
Orientation of the program	The research line is scientifically oriented, the teaching and applied line is practically oriented.
Features and differences	The program are scientifically or practically directed, that determines type of practice (the module 1 or the module 2 in a cycle of disciplines

	of vocational training is selected).
C	**Ability to employment and the further instruction**
Ability to employment	Work stations in the highly technological companies of the industry; teachers of educational institutions of different educational levels; scientific workers in the research organizations, centres of science, laboratories it agrees to names of aspects{views} of the economic activities, presented in the National qualifier of Ukraine: Classification of aspects of economic activities (НКУ:КВЕД ДК 009:2010 acting from 01.01.2010); section C, M (клас 72.19), P. According to the qualifier of trades of a recreation center 003:2010 (with the changes authorized by the order of the Ministry of economic evolution and trade of Ukraine from August, 10, 2016 № 1328), professional names of works, on vocational training from which directed просветительно-professional and просветительно-scientific programs behind a trade: - 2131.2 – - the engineer from computerized control systems of production; the engineer - researcher from the computerized systems that automatics; - 2132.2 – -the programmer applied; - 2144.2 – engineer-electronics engineer; - 2145.2 – the engineer from mechanization and automations of productions; - 2149.1 – the scientific employee in the field of Automation and computer-integrated technologies; - 2149.2 – the engineer from management and maintenance of systems; аналітик lines (except for computers); analyst systems (except for computers); the engineer or the engineer - researcher with computerized management of processes{manufacturing methods}; the engineer - designer (in the field of computerized management of processes{manufacturing methods}); the engineer on adjustment and tests; the development engineer of systems (except for computers)
Further education	Training at the third educational level in doctoral programs in the field of automation and instrument making.
D	**Style of teaching and a technique of instruction**
Approaches to teaching and education	A combination of lectures, practical and seminars, experimental research in laboratories, writing course projects or works, self-study, preparation qualification work.
Methods of a sizing up	Written and oral examinations, offsets, presentations, protection master's qualification work.
E	**Programm competence**
Integrated competence (IC)	*The master (a level 7): Ability to decide{solve} challenges and problems in the field of automation and and computer-integrated*

	technologies or during instruction which provides carrying out of researches and-or realization of innovations and is characterized by indeterminate form of conditions and demands..
General competencies (GC)	*ЗК-1 Ability to detect scientific essence of problems in professional sphere to find adequate paths concerning their solution.* *ЗК-2 Ability to communicate with representatives of other professional groups of a different level (with experts from other fields of knowledge of/aspectsof economic activities, auditors of bodies of certification).* *ЗК-3 Skills of use of information and communication production engineering.* *ЗК-4 Ability to self-contained development new exploratory receptions, change scientific and research-and-production a profile of the activity.* *ЗК-5 Ability to investigate a problem with use of systems analysis, a synthesis, computer modelling and methods of optimization.* *ЗК-6 Ability to oscillate new ideas (creativity) to detect, put and solve problems, to find optimal paths concerning their solution.* *ЗК-7 Ability to analyse, verify to size up completeness of the information during professional work, if necessary to supplement and synthesize the absent information and to work in conditions of indeterminacy.* *ЗК-8 Ability of a message professional, including research activity, in the international environment.* *ЗК-9 Ability to supervise over designs to organize command work, to display the initiative from development of activity.* *ЗК-10 Ability to size up and provide quality of carried out works.*
Express (trades) of competence (СК)	***Planning and design activity:*** *СК-1 Ability to develop requirement specifications on modernization and automation acting production and technological processes and productions, hardware components and systems of automation, management, the control, diagnostic and the tests, new types of products, automated and automatic technologies of its production, means and system of automation, management of processes, life cycle of products and its quality.* *СК-2 Ability to carry out patent researches on the purpose of maintenance of patent purity and patentability of new design solutions and definition of indicators of a technical level of the projected products, automated, automatic technological processes and productions, means their technical and hardware-software.* *СК-3 Ability to make the description of principles of act and a design of the devices, projected hardware components and systems of automation, management, the control, diagnostic and tests of processes and productions of common industrial and express purpose for different areas of the national economy, to project them architectural and software complexes.*

	CK-4 bility to develop sketch, technical and work projects of automated and automatic production of different technological and industrial purposes, technical means and systems of automation of control, the control, diagnostic and tests, control systems of life cycle of products and its quality using modern means of automation of designing, domestic and foreign experience of development of competitive products to carry out{spend} technical calculations under designs, the technical and economic and function - cost analysis of efficiency of designs, to size up their innovational potential and risks. *CK-5 Ability to develop a functional, logical and technical organization of automated and automatic production, their elements, technical, algorithmic and software based on modern methods, tools and design technologies.* *CK-6 Ability to provide: the necessary viability of the means and systems of automation, control, diagnostics, testing and management when changing the external factors that reduce the efficiency of their functioning, development of measures for the integrated use of raw materials, replacement of scarce materials and the study of rational methods for the recycling of waste products.* *CK-7 Ability to perform analysis of the state and dynamics of the functioning of the means and systems of automation, control, diagnostics, testing and product quality management, metrological and normative production, standardization and certification with the use of appropriate modern methods and methods of analysis, to investigate the causes of marriage of production and to develop proposals for its prevention and elimination.* *CK-8 Ability to provide reliability and safety at all stages of the life cycle of products, to choose systems of environmental safety of production.* ***Organizational - administrative activity:*** *CK-9 Ability to choose optimal solutions at creation of products, development of automated technologies and production, means and systems of automation, the control, diagnostic and tests, production management, life cycle of products and its quality, the software, their implementation and efficient operation, taking into account reliability and cost requirements, as well as fulfillment timelines, safety and ecological purity.* *CK-10 Ability to carry out the control over test of a finished product, means and systems of automation and management, material resources which arrive on the factory, the introduction of modern methods of automation and production managemen, life cycle of products and its quality to systematize and integrate information on formation and use of resources of the factory, to carry out their cost estimation.*

	CK-11 Ability to organize in the subsection the work on improvement, modernization, unification of the products being produced, the operating technologies of their elements and technical means of the automated production and on the development of draft standards and certificates, to analyze and adapt the scientific and technical documentation to the predicted improvement, modernization and unification. ***Research activity:*** *CK-12 Ability to develop theoretical models which allow to investigate the quality of manufactured products, production and technological processes, means and systems of automation, control, diagnostics, testing and control, analyze, synthesis and optimization of automation processes, production management, production management, product life cycle and its quality based of the problem-oriented methods.* *CK-13 Ability to carry out mathematical modelling of processes, the equipment, means and systems of automation, the control, diagnostic, tests and management with using modern scientific research technologies, to develop algorithmic and software tools and systems of automation and control;* *CK-14 Ability to develop methodologies, work plans and programs for carrying out scientific research and advanced technical development to prepare specific tasks for executors, scientific and technical reports, reviews and publications based on the results of the performed researches;* *CK-15 Ability to carry out management of results of research activity and commercialization the rights to installations of the intellectual property to carry out its fixing and protection.* ***Scientific and pedagogical activity:*** *CK-16 Ability to participate in the development of curriculum programs and courses based on the study of domestic and foreign scientific, technical and scientific-methodological literature, and also own results of scientific researches;* *CK-17 Ability to carry out the formulation and modernization of individual laboratory works and practical works on disciplines of the field of knowledge, and also ability to conduct certain types of classroom training sessions, including laboratory and practical, and also maintenance of research of those who study.* *CK-18 ability to apply new educational technologies, including computer and distance learning systems.* ***Service and operational activities:*** *CK-19 ability to organize the control of works on adjustment, adjustment, regulating, pilot testing, regulation, technical, operational maintenance of equipment, tools and systems for automation, control, diagnostics, testing, management and software, as well as to ensure the practical application of modern*

	methods and tools determine the performance characteristics of equipment, hardware and systems; ***Express aspects of activity:*** *CK-20 ability to carry out work to improve scientific and technical knowledge and training of employees of subdivisions in the field of automation of technological processes and production.*
F	**Programm results of instruction**
Learning outcomes in the cognitive (cognitive) field	*PKC-1 to develop requirement specifications on: modernization of technical means and automation systems; automation of technological processes and production.* *PKC-2 to conduct patent research and determine the technical indicators of automation systems, their technical and hardware-software.* *PKC-3 to compile a description of the principles of operation and design of the designed technical means and automation systems, to project architectural software systems.* *PKC-4 To develop outline, technical and contractorof technical means and automation systems using modern design automation tools.* *PKC-5 To carry out technical calculations under designs of automation, technical and economic and functional cost analysis of project effectiveness, assess their innovative potential and risks.* *PKC-6 to develop a functional, logical and technical organization of automated and automated production, their elements, technical, algorithmic and software based on modern methods, tools and design technologies.* *PCK-7 to provide the necessary viability of automation tools and systems when external factors change, which reduce the efficiency of their functioning.* *PKC-8 to perform the analysis of the state and dynamics of the functioning of the means and systems of automation with the use of appropriate modern methods and means of analysis.* *PKC-9 ensure reliability and safety at all stages of the product life cycle..* *PKC-10 To choose optimal solutions in the development of automation tools and systems, software, their implementation and effective operation, taking into account the requirements of reliability and cost, as well as deadlines, safety and environmental cleanliness.* *PKC-11 To carry out the control over the means and systems of automation, the introduction of modern methods of automation and production management, product life cycle and its quality; systematize and summarize information on the formation and use of enterprise resources, to carry out their valuation.*

	PKC-12 To analyse and adapt the scientific and technical documentation for predicted development, modernization and unification of means and systems of automation. *PKC-13 To develop theoretical models that allow you to investigate the quality of products that are produced, production and technological processes, tools and automation systems; analyze, synthesize and optimize automation processes based on problem-oriented methods;* *PKC-14 to carry out mathematical modeling of processes, equipment, means and automation systems using modern research technologies; develop algorithmic and software tools and automation systems.* *PKC-15 To develop techniques, work plans and programs of carrying out of scientific researches and advanced technical development, to prepare for separate problems for executors, scientific and technical reports, reviews and publications by results of completed researches.* *PKC-16 to carry out management of the results of research activities and the commercialization of intellectual property rights, to carry out its fixation and protection.* *PKC-17 to take part in the development of curriculum programs and courses based on the study of scientific, technical and scientific-methodical literature, as well as their own research results.* *PKC-18 to carry out the formulation and modernization of individual laboratory work and workshops on the disciplines of the master's training program.* *PKC-19 to conduct certain types of classroom studies, including laboratory and practical, to provide research and development work of those who study.* *PKC-20 To apply new educational technologies, including computer and distance learning systems.* *PKC-21 to organize control over works on adjustment, adjustment, regulation, pilot testing, regulation, technical, operational maintenance of equipment, tools and automation systems, software.* *PKC-22 practical application of modern methods and means of determining the operational characteristics of equipment, hardware and systems.* *PKC-23 to carry out work to improve the scientific and technical knowledge and training of employees of subsections in the field of automation of technological processes and production.*
Learning outcomes in the value-motivational sphere	*РЦМС-1.* Meet the requirements of professional ethics in the workplace. *РЦМС-2.* To take part in discussing the results of different types of work (research, search, design, etc.). *РЦМС-3.* To desire to work independently.

	РЦМС-4. To ask a question in discussions with colleagues and teachers. *РЦМС-5.* To show obtained professional habits at creation of the scientific and design documentation. *РЦМС-6.* To organize provisions from the accident prevention on a work station. *РЦМС-7.* To cooperate with colleagues in adjacent areas for achievement of research problems or the design.
Results of training in the psychomotor sphere	*РПС-1.* To develop the experimental technique. *РПС-2.* Repeatedly to recreate results of experiments to obtain reliable values and calculate the error of the experiment. *РПС-3.* Combine research methods to determine of value of researched parameters and characteristics. *РПС-4.* To adhere to safety precautions in the workplace.

II. DETERMINATION OF TRAINING DISCIPLINES / MODULES, which will ensure achievement of the planned results of training and forms of certification of higher education applicants for the educational program in accordance with the standard of higher education

Table 1. Distribution of the content of the educational-professional program in terms of training cycles and form of final control

№ p/p	Subjects	Loans	Hours	Semeste	Tetramestr	Final control
	1. COMPULSORY PART					
	1.1. General training cycle (generates general competencies)					
1.1.1	Physical culture (extracurricular) *					
1.1.2	Foreign language in professional direction	4,0	120	2	3,4	Diff. credit
1.1.3	Civil Protection	1,5	45	1	1	credit
1.1.4	Labor protection in industry	2,0	60	1	2	exam
1.1.5	Intellectual property	2,0	60	2	4	credit
1.1.6	Psychology and methods of teaching specialty subjects in higher education	2,0	60	2	3	credit
1.1.7	Methodology and organization of scientific research	3,0	90	2	4	exam
	TOTAL BY Cycle 1.1	***14,5***	***435,0***			
1.2 Cycle of professional training (forms special (professional) competence)						
1.2.1	Basics of network technologies	3,5	105	1	1,2	exam
1.2.2	Information networks and telecommunications	11,0	330	1,2	1,2,3	exam
1.2.3	The theory of adaptive and optimal systems	5,0	150	1	1,2	credit
1.2.4	Preparation of qualification master's work and state certification (SC)	19,5	585	3	5,6	SC
	TOTAL BY Cycle 1.2	***39,0***	***1170***			
	MANDATORY PART TOTAL	**53,5**	**1605**			

2 CURRENT PART						
2.1 General training cycle (generates general competencies)						
	TOTAL BY Cycle 2.1					
2.2 Cycle of professional training (forms special (professional) competence)						
2.2.1	Computer methods of identification and optimizing CTP	5	150	1	1,2	exam
2.2.2	Modern problems of automated control	11	330	1,2	2,3,4	exam
2.2.3	One of the modules	10,5	315			
	Module 1					
	Research practice	6,0	180	3	5	Diff. credit
	Assistant practice	4,5	135	3	5	Diff. credit
	Module 2					
	Research practice	6,0	180	3	5	Diff. credit
	Pre-Degree Industrial Practice	4,5	135	3	5	Diff. credit
	Additional credits for the preparation of qualifying master's work	8,0	240	2	3,4	
	TOTAL BY Cycle 2.2	***36,5***	***795,0***			
	CURRENT PART TOTAL	**36,5**	**795,0**			
	TOTAL VOLUME	**90,0**	**2400**			

Table 2. Generalized distribution of the content of educational and professional program by groups of components (disciplines) and training cycles

№ p/p	Training cycle	Educational load of the applicant of higher education (credits /%)		
		Compulsory components of an educational and professional program	Elective components of the educational-professional program	Total for the whole period of study
1	General training cycle (generates general competencies)	14,5/16,1	-	14,5/16,1
2	Cycle of professional training (forms special (professional) competence)	39,0/43,3	36,5/40,6	75,5/83,9
Total for the whole period of study		53,5/59,4	36,5/40,6	90,0/100,0

Table 3. List of disciplines of the educational-professional program of preparation of applicants for education the second (master's) level, ECTS credits in training periods for training cycles, and a list of formed competencies and learning outcomes

Training cycles	Criteria of competencies	Criteria for learning outcomes	List of disciplines	Кредитів ЄКТС
1	2	3	4	5
1.1. General training cycle (generates general competencies)			1.1.1 Physical culture (extracurricular) *	
	ІС, ЗК-2, ЗК-3, ЗК-8, ЗК-9, СК-2, СК-16, СК-18	РКС-2, РКС-17, РКС-20, РЦМС-2, РЦМС-4, РЦМС-5, РЦМС-7	1.1.2 Foreign language in professional direction	4,0
	ІС, ЗК-2, ЗК-3, ЗК-4, ЗК-6, ЗК-9	РЦМС-2, РЦМС-6	1.1.3 Civil Protection	1,5
	ІС, ЗК-2, ЗК-3, ЗК-4, ЗК-6	РЦМС-6, РПС-4	1.1.4 Labor protection in industry	2,0
	ІС, ЗК-2, ЗК-7, ЗК-8, СК-15	РКС-16, РЦМС-2, РЦМС-3, РЦМС-4, РЦМС-5, РЦМС-7	1.1.5 Intellectual property	2,0
	ІС, ЗК-2, ЗК-3, ЗК-4, ЗК-6, ЗК-8, ЗК-9, ЗК-10, СК-14, СК-16, СК-17, СК-18, СК-20	РКС-15, РКС-17, РКС-18, РКС-19, РКС-20, РКС-23, РЦМС-1, РЦМС-2, РЦМС-4, РЦМС-5, РЦМС-7	1.1.6 Psychology and methods of teaching specialty subjects in higher education	2,0
	ІС, ЗК-1, ЗК-2, ЗК-3, ЗК-4, ЗК-5, ЗК-6, ЗК-7, ЗК-8, СК-2, СК-12, СК-14, СК-15, СК-16, СК-17	РКС-2, РКС-13, РКС-15, РКС-16, РКС-17, РКС-18, РКС-19, РЦМС-2, РЦМС-3, РЦМС-5, РЦМС-7, РПС-1, РПС-2, РПС-3	1.1.7 Methodology and organization of scientific research	3,0
			TOTAL 1.1	**14,5**

1.2 Cycle of professional training (forms special (professional) competence)	IC, ЗК-3, СК-3, СК-5, СК-6, СК-10, СК-12, СК-13, СК-17, СК-18, СК-20	РКС-3, РКС-6, РКС-7, РКС-11, РКС-13, РКС-14, РКС-18, РКС-19, РКС-20, РКС-23	1.2.1 Basics of network technologies	3,5
	IC, ЗК-3, ЗК-7, СК-1, СК-3, СК-5, СК-9, СК-10, СК-12, СК-13, СК-15, СК-17, СК-18, СК-19, СК-20	РКС-1, РКС-3, РКС-6, РКС-10, РКС-11, РКС-13, РКС-14, РКС-16, РКС-18, РКС-19, РКС-20, РКС-21, РКС-22, РКС-23, РЦМС-1	1.2.2 Information networks and telecommunications	11,0
	IC, ЗК-1, ЗК-5, ЗК-7, ЗК-10, СК-1, СК-3, СК-9, СК-11, СК-12, СК-13, СК-17, СК-20	РКС-1, РКС-3, РКС-10, РКС-12, РКС-13, РКС-14, РКС-18, РКС-19, РКС-23	1.2.3 The theory of adaptive and optimal systems	5,0
	IC, ЗК-1, ЗК-2, ЗК-3, ЗК-4, ЗК-5, ЗК-6, ЗК-7, ЗК-8, ЗК-10, СК-1, СК-2, СК-3, СК-4, СК-5, СК-6, СК-7, СК-8, СК-9, СК-10, СК-11, СК-12, СК-13, СК-14, СК-15, СК-16, СК-17, СК-18, СК-19, СК-20	РКС-1, РКС-2, РКС-3, РКС-4, РКС-5, РКС-6, РКС-7, РКС-8, РКС-9, РКС-10, РКС-11, РКС-12, РКС-13, РКС-14, РКС-15, РКС-16, РКС-17, РКС-18, РКС-19, РКС-20, РКС-21, РКС-22, РКС-23, РЦМС-1, РЦМС-2, РЦМС-3, РЦМС-4, РЦМС-5, РЦМС-6, РЦМС-7, РПС-1, РПС-2, РПС-3, РПС-4	1.2.4 Preparation of qualification master's work and state certification (SC)	19,5
			TOTAL 1.2	**39,0**
2.2 Cycle of professional	IC, ЗК-5, ЗК-7, ЗК-10, СК-1, СК-2, СК-3, СК-6, СК-7, СК-8,	РКС-1, РКС-2, РКС-3, РКС-7, РКС-8, РКС-9, РКС-10, РКС-11, РКС-	2.2.1 Computer methods of identification and optimizing CTP	5,0

training (forms special (professional) competence)	СК-9, СК-10, СК-11, СК-12, СК-13, СК-17, СК-19, СК-20	12, РКС-13, РКС-14, РКС-18, РКС-19, РКС-21, РКС-22, РКС-23, РПС-1, РПС-2, РПС-3		
	ІС, ЗК-1, ЗК-2, ЗК-5, ЗК-6, ЗК-7, ЗК-9, ЗК-10, СК-1, СК-2, СК-3, СК-4, СК-5, СК-6, СК-7, СК-8, СК-9, СК-11, СК-12, СК-14, СК-17, СК-19, СК-20	РКС-1, РКС-2, РКС-3, РКС-4, РКС-5, РКС-6, РКС-7, РКС-8, РКС-9, РКС-10, РКС-12, РКС-13, РКС-15, РКС-18, РКС-19, РКС-21, РКС-22, РКС-23, РЦМС-2, РЦМС-7	2.2.2 Modern problems of automated control	11,0
			2.2.3 One of the modules	10,5
			Module 1	
	ІС, ЗК-1, ЗК-2, ЗК-3, ЗК-4, ЗК-5, ЗК-6, ЗК-7, ЗК-8, ЗК-9, ЗК-10, СК-1, СК-2, СК-3, СК-4, СК-5, СК-6, СК-7, СК-8, СК-9, СК-10, СК-11, СК-12, СК-13, СК-14, СК-15, СК-16, СК-17, СК-18, СК-19, СК-20	РКС-1, РКС-2, РКС-3, РКС-4, РКС-5, РКС-6, РКС-7, РКС-8, РКС-9, РКС-10, РКС-11, РКС-12, РКС-13, РКС-14, РКС-15, РКС-16, РКС-17, РКС-18, РКС-19, РКС-20, РКС-21, РКС-22, РКС-23, РЦМС-1, РЦМС-2, РЦМС-3, РЦМС-4, РЦМС-5, РЦМС-6, РЦМС-7, РПС-1, РПС-2, РПС-3, РПС-4	Research practice	6,0
	ІС, ЗК-2, ЗК-3, ЗК-4, ЗК-9, СК-14, СК-16, СК-17, СК-18, СК-20	РКС-15, РКС-17, РКС-18, РКС-19, РКС-20, РКС-23, РЦМС-1, РЦМС-2, РЦМС-3, РЦМС-4, РЦМС-5,	Assistant practice	4,5

		РЦМС-6, РЦМС-7, РПС-4		
			Module 2	
	ІС, ЗК-1, ЗК-2, ЗК-3, ЗК-4, ЗК-5, ЗК-6, ЗК-7, ЗК-8, ЗК-9, ЗК-10, СК-1, СК-2, СК-3, СК-4, СК-5, СК-6, СК-7, СК-8, СК-9, СК-10, СК-11, СК-12, СК-13, СК-14, СК-15, СК-16, СК-17, СК-18, СК-19, СК-20	РКС-1, РКС-2, РКС-3, РКС-4, РКС-5, РКС-6, РКС-7, РКС-8, РКС-9, РКС-10, РКС-11, РКС-12, РКС-13, РКС-14, РКС-15, РКС-16, РКС-17, РКС-18, РКС-19, РКС-20, РКС-21, РКС-22, РКС-23, РЦМС-1, РЦМС-2, РЦМС-3, РЦМС-4, РЦМС-5, РЦМС-6, РЦМС-7, РПС-1, РПС-2, РПС-3, РПС-4	Research practice	6
	ІС, ЗК-1, ЗК-2, ЗК-3, ЗК-4, ЗК-5, ЗК-6, ЗК-7, ЗК-8, ЗК-9, ЗК-10, СК-1, СК-2, СК-3, СК-4, СК-5, СК-6, СК-7, СК-8, СК-9, СК-10, СК-11, СК-12, СК-13, СК-14, СК-15, СК-16, СК-17, СК-18, СК-19, СК-20	РКС-1, РКС-2, РКС-3, РКС-4, РКС-5, РКС-6, РКС-7, РКС-8, РКС-9, РКС-10, РКС-11, РКС-12, РКС-13, РКС-14, РКС-15, РКС-16, РКС-17, РКС-18, РКС-19, РКС-20, РКС-21, РКС-22, РКС-23, РЦМС-1, РЦМС-2, РЦМС-3, РЦМС-4, РЦМС-5, РЦМС-6, РЦМС-7, РПС-1, РПС-2, РПС-3, РПС-4	Pre-Degree Industrial Practice	4,5
	ІС, ЗК-1, ЗК-2, ЗК-3, ЗК-4, ЗК-5, ЗК-6, ЗК-	РКС-1, РКС-2, РКС-3, РКС-4, РКС-5, РКС-6,	Additional credits for the preparation of qualifying	10,0

	7, ЗК-8, ЗК-10, СК-1, СК-2, СК-3, СК-4, СК-5, СК-6, СК-7, СК-8, СК-9, СК-10, СК-11, СК-12, СК-13, СК-14, СК-15, СК-16, СК-17, СК-18, СК-19, СК-20	РКС-7, РКС-8, РКС-9, РКС-10, РКС-11, РКС-12, РКС-13, РКС-14, РКС-15, РКС-16, РКС-17, РКС-18, РКС-19, РКС-20, РКС-21, РКС-22, РКС-23, РЦМС-1, РЦМС-2, РЦМС-3, РЦМС-4, РЦМС-5, РЦМС-6, РЦМС-7, РПС-1, РПС-2, РПС-3, РПС-4	master's work	
			TOTAL 2.2	**36,5**
			TOTAL	**90,0**

Table 4 – Matrix of compliance of program competences with educational components

The code of the discipline for the curriculum	1.1.2	1.1.3	1.1.4	1.1.5	1.1.6	1.1.7	1.2.1	1.2.2	1.2.3	1.2.4	2.2.1	2.2.2	2.2.3 Module 1		2.2.3 Module 2	
													Research practice	Assistant practice	Research practice	Pre-Degree Industrial Practice
IC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ЗК-1						+			+	+		+	+		+	+
ЗК-2	+	+	+	+	+	+				+		+	+	+	+	+
ЗК-3	+	+	+		+	+	+	+		+			+	+	+	+
ЗК-4		+	+		+	+				+			+	+	+	+
ЗК-5						+			+	+	+	+	+		+	+
ЗК-6		+	+		+	+				+		+	+		+	+
ЗК-7				+		+		+	+	+	+	+	+		+	+
ЗК-8	+			+	+	+				+			+		+	+
ЗК-9	+	+			+							+	+	+	+	+
ЗК-10					+				+	+	+	+	+		+	+
СК-1								+	+	+	+	+	+		+	+
СК-2	+					+				+	+	+	+		+	+
СК-3							+	+	+	+	+	+	+		+	+
СК-4										+		+	+		+	+
СК-5							+	+		+		+	+		+	+

CK-6							+			+	+	+	+		+	+
CK-7										+	+	+	+		+	+
CK-8										+	+	+	+		+	+
CK-9								+	+	+	+	+	+		+	+
CK-10							+	+		+	+		+		+	+
CK-11									+	+	+	+	+		+	+
CK-12						+	+	+	+	+	+	+	+		+	+
CK-13							+	+	+	+	+		+		+	+
CK-14					+	+				+		+	+	+	+	+
CK-15				+		+		+		+			+		+	+
CK-16	+				+	+				+			+	+	+	+
CK-17					+	+	+	+	+	+	+	+	+	+	+	+
CK-18	+				+		+	+		+			+	+	+	+
CK-19								+		+	+	+	+		+	+
CK-20					+		+	+	+	+	+	+	+	+	+	+

Table 5 - Matrix providing programmatic learning outcomes relevant components Educational-professional program

The code of the discipline for the curriculum	1.1.2	1.1.3	1.1.4	1.1.5	1.1.6	1.1.7	1.2.1	1.2.2	1.2.3	1.2.4	2.2.1	2.2.2	2.2.3 Module 1		2.2.3 Module 2	
													Research practice	Assistant practice	Research practice	Pre-Degree Industrial Practice
PKC-1								+	+	+	+	+	+		+	+
PKC-2	+					+				+	+	+	+		+	+
PKC-3							+	+	+	+	+	+	+		+	+
PKC-4										+		+	+		+	+
PKC-5										+		+	+		+	+
PKC-6							+	+		+		+	+		+	+
PKC-7							+			+	+	+	+		+	+
PKC-8										+	+	+	+		+	+
PKC-9										+	+	+	+		+	+
PKC-10								+	+	+	+	+	+		+	+
PKC-11							+	+		+	+		+		+	+
PKC-12									+	+	+	+	+		+	+
PKC-13						+	+	+	+	+	+	+	+		+	+
PKC-14							+	+	+	+	+		+		+	+
PKC-15					+	+				+		+	+	+	+	+

РКС-16				+		+		+		+			+		+	+
РКС-17	+				+	+				+			+	+	+	+
РКС-18					+	+	+	+	+	+	+	+	+	+	+	+
РКС-19					+	+	+	+	+	+	+	+	+	+	+	+
РКС-20	+				+		+	+		+			+	+	+	+
РКС-21								+		+	+	+	+		+	+
РКС-22								+		+	+	+	+		+	+
РКС-23					+		+	+	+	+	+	+	+	+	+	+
РЦМС-1					+			+		+			+	+	+	+
РЦМС-2	+	+		+	+	+				+		+	+	+	+	+
РЦМС-3				+		+				+			+	+	+	+
РЦМС-4	+			+	+					+			+	+	+	+
РЦМС-5	+			+	+	+				+			+	+	+	+
РЦМС-6		+	+							+			+	+	+	+
РЦМС-7	+			+	+	+				+		+	+	+	+	+
РПС-1						+				+	+		+		+	+
РПС-2						+				+	+		+		+	+
РПС-3						+				+	+		+		+	+
РПС-4			+							+			+	+	+	+

III - FORMS OF APPLICATION OF HIGHER EDUCATION BUILDERS

Forms of certification of applicants for higher education	A mandatory form of state certification establishes the implementation and protection of qualifying (diploma) works (projects). The system of competencies and learning outcomes indicated in sections IV and V are issued to the state attestation. The main means of objective control of the degree of achievement of the ultimate goals of education and training of bachelors is the technology for the implementation and protection of qualifying (diploma) works (projects) defined in the following documents: Regulation on EC, Methodological guidelines for the implementation of qualification (diploma) projects (works).
Requirements for final qualification work (in the presence)	Requirements for the final qualification work are set out in the Methodological Guidelines for the implementation of qualification (diploma) projects (works). The final qualification work is accompanied by a review by the supervisor and a reviewer's review, which is based on verification of the completeness of the tasks, the quality of work in general and its verification of plagiarism.
Requirements for the certification / single state qualification exam (exams) (in the presence)	
Requirements for public security (demonstrations) (in the presence)	Requirements for public security are formulated in the Regulation on EC and methodological guidelines for the implementation of qualification (diploma) projects (works).

IV - Requirements for the system of internal quality assurance in higher education

Determined in accordance with European Standards and Recommendations for the Quality of Higher Education (ESG) and Article 16 of the Law of Ukraine «Про вищу освіту»

Components of the system of internal quality assurance in higher education	**Визначення, посилання та відповідні документи**
Principles and procedures for ensuring the quality of education	- Law of Ukraine "On Higher Education" of 01.07.2014 № 1556-VII; - - Provisional provision on the organization of the educational process at the Secondary School of Economics and Management of UDCTU (Order of the Rector of the Secondary School of Economics and Technical University of Udmurt of UDCTMU dated November 30, 2015, No. 290); - - Regulations on the diploma with honors from the Dvnz UDKhTU (Order of the Rector of the Dvnz UDKhTU dated 25/02/2016, No. 55); - - Regulation on the procedure for the creation and organization of the work of the examination commission at the Secondary School of Economics and Business Administration of Ukraine (Order of the Rector dated 01.04.2015, No. 68); - - Regulations on the development of approval and review of working programs of educational disciplines (Order of the Rector of the Dvnz UDKhTU dated 01.12.15, No. 291)
Monitoring and periodic review of educational programs	Annual monitoring of industry and labor market requirements, revision of educational programs, work curricula, work programs of academic disciplines. About approval of the composition of the project groups for the development of educational programs (Order of the Rector of the Dvnz UDKhTU dated March 10, 2016, No. 74)
Annual assessment of higher education applicants	Regulations on the organization of rector's control over the quality of education (Order of the Rector dated March 17, 2014, No. 78)
Annual evaluation of scientific-pedagogical and pedagogical	Regulations on the commission of rector's control pedagogical skills of scientific and pedagogical workers of the University (Order of the Rector of the Dvnz

workers of a higher educational establishment	UDKhTU dated April 04, 2016, No. 85), Order of application of the rating system for the assessment of the activity of scientific and pedagogical workers of the Dvnz UDKhTU (Order of the Rector dated 04.06.2010, No. 209 with changes to the order of 09.06 .0101 p. № 147), The procedure for applying the rating system for the assessment of the activities of the departments and faculties of the Secondary School of Economics and Management of the UkhKhTUU (Order of the Rector dated 04/06/2010, No. 209). Regularly publishing the results of such assessments on the official website of the higher education institution, on information stands and in any other way.
Improvement of qualification of scientific and pedagogical, pedagogical and scientific workers	Raising the qualification of scientific and pedagogical workers is carried out in accordance with the provision approved by the order of the Ministry of Education and Science of Ukraine from 24.01.2013. № 48 and the Regulations on the upgrading of qualifications and internship of pedagogical and scientific-pedagogical workers of the Dvnz UDKhTU (Order of the Rector of the Dvnz UDKhTU dated May 28, 2016, No.105)
The availability of the necessary resources for the organization of the educational process	Educational, methodological, logistical and personnel support corresponds to licensing conditions (CM Decree dated December 30, 2015 № 1187) of educational activity. License Serial AE №636496. Certificates in the field of training and specialties.
Availability of information systems for effective management of the educational process	The temporary provision on the organization of the educational process at the State Pedagogical University of the Udmurt State University of Agriculture (Order of the Rector of the State Pedagogical University of Udmansk UDCTU dated 30.11.2015 № 290) is supported by the Information-analytical control system of the educational process, which consists of subsystems: the Applicant, the Educational process.
Publicity of information about educational programs, degrees of higher education and qualifications	Information about educational programs, degrees of higher education and qualifications is public and fully disclosed on the official web-portal of the university http://udhtu.com.ua
Prevention and Detection of Academic Plagiarism	Verification of the completeness of the tasks, the quality of work in general and its verification for plagiarism is carried out by the teacher - the head of the course or diploma work (project) in the established procedure with the use of the appropriate software