

Ministry of Education and Science of Ukraine
State higher education institution
«Ukrainian State University of Chemical Technology»

Rector SHEI USUCT

_____ K.M. Sukhyi

«_____» _____ 2019.

EDUCATION PROFESSIONAL PROGRAM

Second (master's) level

(name of higher education level)

Master

(the name of the degree awarded)

BRANCH OF KNOWLEDGE

16 Chemical and bioengineering

(code and name of the field of knowledge)

SPECIALTY

161 Chemical technology and engineering

(specialty code and name)

SPECIALIZATION

(in the presence)

Approved at the meeting of the
Academic Council SHEI USUCT
from «_____» _____ 2019.
protocol № _____

Dnipro
2019

I. PROFILE OF THE MASTER'S EDUCATION PROFESSIONAL PROGRAM

in the specialty "Chemical Technology and Engineering"

Program Profile (General Information)	
Full name of the qualification in the original language	Master of Science (MSc) in Chemical Technology and Engineering Specialization Chemical technology of fuel and carbon materials
The official name of the educational program	Educational and professional training program for Master of Science in Chemical Technology and Engineering
Type of diploma and scope of educational program	Master's Degree in Chemical Technology and Engineering, single (double, joint with relevant contracts, training programs); 90 ECTS credits
Full name of higher education institution awarding the qualification	State higher education institution «Ukrainian State University of Chemical Technology»
Accrediting organization	Accreditation Commission of Ukraine («Educational-methodical center on quality of education»).NAHEQA.
Accreditation period	Accredited on June 5, 2013, Series ND IV, No. 0423967, validity of the accreditation certificate until July 1, 2018
Cycle / level	NQF of Ukraine - Level 7, FQ-EHEA - Second Cycle, EQF-LLL - Level 7
Prerequisites	The first (bachelor) level
Language (s) of teaching	Ukrainian language
A	
The purpose of the educational program	
The purpose of the educational program	Provide students with the acquisition of knowledge, skills and understanding in the field of chemical technology that will enable them to perform original research or work independently in production.
Б	
Характеристика освітньої програми	
Subject area (field of knowledge, specialty)	Knowledge Area 16 - Chemical and Bioengineering: specialty 161 - Chemical technology and engineering specialization - Chemical technology of fuel and carbon materials
The main focus of the program and specialization	General higher education in the field of chemical technology.
Orientation of the program	The research line is scientifically oriented, the teaching and application lines are practically oriented.
Features and differences	The program is scientifically or practically oriented, defining the type of practice (module 1 or module 2 in the cycle of vocational training courses is selected).

C	Ability to find employment and further education
Employment ability	Jobs in high-tech chemical-technology companies, chemical industry and related industries; teachers of educational establishments of different levels of education, scientists in research organizations, scientific centers, laboratories.
Further training	Master's degree in chemical technology at the second level.
D	Teaching style and teaching methodology
Approaches to teaching and learning	A combination of lectures, practicals and seminars, experimental research in laboratories, writing of course projects or papers, self-study, preparation of qualification work.
Assessment methods	Written and oral examinations, tests, presentations, defense of bachelor's qualification work.
E	Software competencies
Integral competence	<i>Master's Degree (Level 7): The ability to solve complex problems and problems in a particular area of professional activity or in a learning process that involves research and / or innovation and is characterized by uncertain conditions and requirements</i>
General competencies (GC)	<p>GC -1. Ability to think abstractly, analyze and synthesize.</p> <p>GC -2. Ability to speak a second language.</p> <p>GC -3. Use of information and communication technologies.</p> <p>GC -4. Ability to conduct research at the appropriate level.</p> <p>GC -5. Ability to learn and be modernly trained.</p> <p>GC -6. Ability to search, process and analyze information from various sources.</p> <p>GC 7. The ability to be critical and self-critical.</p> <p>GC -8. The ability to adapt and act in a new situation.</p> <p>GC -9. The ability to work as a team.</p> <p>GC -10. Interpersonal skills.</p> <p>GC -11. The commitment to safety.</p> <p>GC -12. Ability to act on the basis of ethical considerations (motives).</p> <p>GC -13. Determination and perseverance about tasks and responsibilities.</p> <p>GC -14. The desire to preserve the environment.</p> <p>GC -15. Ability to apply basic knowledge of fundamental sciences to the extent necessary for the theoretical development of vocationally-oriented disciplines and the solution of practical problems in chemical technology and engineering</p>
Special (professional, substantive) competencies (SC)	<p>SC -1. Ability to possess methods of observing, describing, identifying and classifying objects of chemical technology and industrial products.</p> <p>SC -2. Ability to use the knowledge, skills and competences in the disciplines of the general cycle of preparation for the theoretical</p>

development of the disciplines of professional direction and solving practical problems of chemical technology.

SC -3. Basic ideas about the basic laws of development and modern achievements in chemical technologies, understanding of the role of energy saving in modern technology.

SC -4. Basic concepts of signs, parameters, characteristics, structure, properties of chemical systems.

SC -5. Ability to apply basic physicochemical methods of research, analysis and assessment of the state of chemical-technological systems.

SC -6. Ability to apply modern experimental methods of working with technological objects in industrial and laboratory conditions, skills of work with modern measuring equipment.

SC -7. Ability to organize the work of the production unit in accordance with the requirements of life safety, labor protection and civil protection.

SC -8. Possibility of organizing and conducting training sessions in professionally oriented disciplines.

SC -9. Ability to use mathematical apparatus for the development of theoretical foundations and practical use of methods of physical and chemical research for the development of new types of chemical products.

SC -10. The skills to work with the most common computer software packages and use them to solve professional work challenges.

SC -11. The ability to use professionally profiled knowledge and practical skills in vocational training disciplines to analyze the relationship between chemical composition and the properties of chemicals and materials based on them.

SC -12. Competence in planning, designing and executing research work, from the stage of problem recognition to the evaluation of results and formulation of conclusions; this includes the ability to select appropriate methods and procedures.

SC -13. Ability to use professionally profiled knowledge and practical skills in the basics of management and chemical technology to create, organize and effectively manage production units.

SC -14. Information retrieval skills for primary and secondary sources of information, including on-line search engines

SC -15. Ability to use professionally profiled knowledge, skills and competences in a cycle of training disciplines to analyze, evaluate and design technological processes and equipment.

SC -16. Ability to use automated process control systems in the industry.

SC -17. Presentation skills of scientific materials and arguments in written and oral form for a competent audience.

F	Program learning outcomes
Learning outcomes in the cognitive (cognitive) field (LOCF)	<p><i>LOCF-1.</i> Apply methods of observation, description, identification and classification of chemical technology and industrial objects.</p> <p><i>LOCF -2.</i> To apply a systematic approach, integrating knowledge from other disciplines and taking into account non-technical aspects, while solving theoretical and applied problems of chemical technology</p> <p><i>LOCF -3.</i> Assess the state of the art of chemical production technologies and their development trends.</p> <p><i>LOCF -4.</i> Analyze the processes and phenomena observed in chemical technology.</p> <p><i>LOCF -5.</i> Make sound choice of research object and methods, formulate research goals and objectives, and identify ways to address them</p> <p><i>LOCF -6.</i> Investigate the physicochemical properties of the object of study, as well as the influence of technological parameters on the course of processes and composition of the final product, using advanced methods of experimental research and modern measuring equipment.</p> <p><i>LOCF -7.</i> Use modern information and communication technologies for search, calculation, creation of graphic and text documents, for mathematical analysis and statistical processing in experimental researches and design</p> <p><i>LOCF -8.</i> Draw general conclusions from the research results of the properties of the research or design object</p> <p><i>LOCF -9.</i> Explain the causes of the risks associated with the use of chemicals and laboratory procedures.</p> <p><i>LOCF -10.</i> To develop safety measures at the production with their further implementation.</p> <p><i>LOCF -11.</i> Organize the conduct of training sessions, as well as the control of student learning outcomes.</p> <p><i>LOCF -12.</i> Design drawings of equipment, structural elements, sections or chemical production shops.</p> <p><i>LOCF -13.</i> To develop technological and equipment schemes chemical-technological productions, to choose the appropriate technological equipment.</p> <p><i>LOCF -14.</i> Organize systematic management of production units.</p> <p><i>LOCF -15.</i> Find engineering solutions to create low-waste resource-saving technologies.</p> <p><i>LOCF -16.</i> Develop schematic diagrams of control and automatic control of the basic parameters of the chemical-technological process.</p>
Learning outcomes in the value-motivational sphere (LVMS)	<p><i>LVMS -1.</i> Meet the requirements of professional ethics in the workplace.</p> <p><i>LVMS -2.</i> Desire to work independently.</p> <p><i>LVMS -3.</i> Ask questions in discussions with colleagues, teachers.</p>

	<p><i>LVMS -4.</i> Organize research at the appropriate level.</p> <p><i>LVMS -5.</i> Apply knowledge of the basic sciences to master the disciplines of professional direction.</p> <p><i>LVMS -6.</i> Participate in the discussion of the results of different types of work (pilot, search, project, etc.).</p> <p><i>LVMS -7.</i> Demonstrate acquired professional skills in creating scientific and project documentation.</p> <p><i>LVMS -8.</i> Organize measures for the conservation of the environment.</p> <p><i>LVMS -9.</i> Collaborate with colleagues in related fields to achieve research or project objectives.</p> <p><i>LVMS -10.</i> To present the results of different types of work (pilot, search, project, etc.) in your native language and one of the main European languages.</p> <p><i>LVMS -11.</i> Understand scientific and technical texts in your native and one of the major European languages.</p>
Results of training in the psychomotor sphere (RPS)	<p><i>RPS-1.</i> Work out the experiment technique</p> <p><i>RPS-2.</i> Repeatedly reproduce the results of the experiments to obtain reliable values and calculate the error of the experiment.</p> <p><i>RPS-3.</i> Combine different research methods to determine the values of the studied parameters.</p> <p><i>RPS-4.</i> Comply with workplace safety.</p>

II. DEFINITIONS OF EDUCATIONAL DISCIPLINES / MODULES, ensuring the achievement of the planned learning outcomes and forms of certification of higher education applicants in accordance with the higher education standard

Table 1. Distribution of the content of educational and professional program by cycles of preparation and form of final control

No	Subjects	Credit	Hours	Semester	Tetramester	Final control
1. COMPULSORY EDUCATIONAL DISCIPLINES						
1.1. 1.1. General training cycle (generates competencies)						
1.1.1	Management in production	4,0	120	1	1	differentiated test
1.1.2	Intellectual Property	2,0	60	2	4	test

1.1.3	Psychology and methods of teaching professional disciplines in higher education	2,0	60	2	3	test
1.1.4	Foreign language for professional purposes	4	120	2	3,4	differentiated test
1.1.5	Civil Protection	1,5	45	1	2	test
1.1.6	Occupational Health in	2,0	60	1	1	exam
1.1.7	Physical Education (Off Credit)					
	TOGETHER on cycle 1.1	15,5	465			
1.2. Training cycle (forms special (professional) competences)						
1.2.1	Automated process control systems in the industry	4,0	120	1	2	differentiated test
1.2.2	Research practice	6,0	180	3	5	differentiated test
1.2.3	Preparation of Master's Degree and State Certification (SC)	23,5	705			DC
	TOGETHER on cycle 1.2	33,5	1005			
	A MANDATORY PART TOGETHER	49	1470			
2. SELECTIVE COURSES						
2.1. General training cycle (generates competencies)						
2.2.1	Methodology and organization of scientific research	6,0	180	2	3,4	exam
	TOGETHER on cycle 2.1	6,0	180			
2.2. Training cycle (forms special (professional) competences)						
2.2.1	Theoretical bases of technological processes of processing of combustible minerals	5,0	150	2	3,4	exam
2.2.2	Modern technologies of modification, optimization of composition and operational properties of motor fuels	8,0	240	1,2	1,2,3,4	exam
2.2.3	Designing of fossil fuel processing industries using computer technology	3,0	90	1	1,2	exam
2.2.4	Chemotomology	4,0	120	1	1,2	exam
2.2.5	Technology of processing of fossil fuels	4,5	135	1	1,2	exam
2.2.6	Student's research work	6,0	180	1,2	1,4	RW
2.2.7	One type of practical training	4,5	135	3	5	differentiated test
2.2.7.1	Assistant practice					
2.2.7.2	Undergraduate manufacturing practice					

	<i>TOGETHER on cycle 2.2</i>	35	1050			
	SAMPLE PART TOGETHER	41	1230			
	TOTAL VOLUME	90	2700			

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

№	Preparation cycle	Higher education student load (credits /%)		
		Compulsory components of a professional education program	Selective components of a professional education program	Total for the whole term of study
1.	General training cycle (generates competencies)	15,5 / 17,2	6/6,7	21,5 / 23,9
2.	Training cycle (forms special (professional) competences)	33,5 / 37,2	35 / 38,9	68,5 /76,1
Total for the whole term of study		49/ 54,4	41/45,6	90 / 100

Table 3. List of disciplines of educational and professional training program for second-level (master's) level students, educational time in ECTS credits by training cycles, and list of competences and learning outcomes formed

Training cycles	Competency Codes	Learning outcomes codes	List of disciplines	ECTS credits
1	2	3	4	5
1.1. General training cycle (generates competencies)	GC-1, GC -2, GC -3, GC -4, GC -5, GC -6, GC -7, GC -10 SC -3, SC-7, SC -10, SC-13, SC-14, SC -17	LOCF -3, LOCF-5, LOCF -7, LOCF-8, LOCF -14, LVMS-1, LVMS -2, LVMS -3, LVMS -4, LVMS -6, LVMS -9, LVMS -10, LVMS -11	1.1.1 Management in production	4,0
	GC -1, GC -2, GC -3, GC -4, GC -5, GC -6, GC -7, GC -8, GC -9, GC -10, GC -13, GC -14, GC -15 SC -1, SC-2, SC-3, SC-4, SC-5, SC-6, SC-9, SC-10, SC-11, SC-12, SC-14, SC-17	LOCF -1, LOCF-2, LOCF-3, LOCF-4, LOCF-5, LOCF -6, LOCF-7, LOCF-8, LOCF-15, LVMS -1, LVMS -2, LVMS -3, LVMS -4, LVMS -5, LVMS -6, LVMS -7, LVMS -9, LVMS -10, LVMS -11	1.1.2 Intellectual Property	2,0
	GC -1, GC -2, GC -3, GC -4, GC -5, GC -6, GC -7, GC -8, GC -9, GC -10, GC -12, GC -13, GC -15 SC -1, SC-2, SC -8, SC-10, SC-11, SC-12, SC-14, SC-17	LOCF -1, LOCF-2, LOCF-3, LOCF-4, LOCF-7, LOCF -11, LVMS -1, LVMS -2, LVMS -3, LVMS -4, LVMS -5, LVMS -6	1.1.3 Psychology and methods of teaching professional disciplines in higher education	2,0
	GC -1, GC -2, GC -3, GC -5, GC -6, GC -7, GC -8, GC -9, GC -10, GC -13, SC -14, SC-17	LOCF -11, LVMS -2, LVMS -3, LVMS -7, LVMS -10, LVMS -11	1.1.4 Foreign language for professional purposes	4,0
	GC -3, GC -5, GC -6, GC -7,	LOCF -9, LOCF-10,	1.1.5 Civil Protection	1,5

	GC -8, GC -9, GC -10, GC -11, GC -12, GC -13, GC -14, SC-5, SC-7, SC-10, SC-14, SC-17	LOCF-15, LVMS -2, LVMS -8, LVMS -10, LVMS -11, RPS-4		
	GC -3, GC -4, GC -5, GC -8, GC -10, GC -11, GC -13, GC -14, GC -15, SC -2, SC-4, SC-6, SC-7, SC-10, SC-11, SC-14, SC-17	LOCF -1, LOCF-3, LOCF-4, LOCF-6, LOCF-7, LOCF-9, LOCF -10, LOCF-12, LOCF -15, LVMS -4, LVMS -5, LVMS -6, LVMS -7, LVMS -9, LVMS -10, LVMS -11, RPS -4	1.1.6 Occupational Health in	2,0
			1.1.7 Physical Education (Off Credit)	
			TOTAL 1.1	15,5
1.2 Training cycle (forms special (professional) competences)	GC -1, GC -3, GC -4, GC -5, GC -6, GC -8, GC -11, GC -14, GC -15, SC -1, SC-2, SC-6, SC-9, SC-10, SC-14, SC-15, SC-16, SC-17	LOCF -1, LOCF-3, LOCF-4, LOCF-6, LOCF-7, LOCF-9, LOCF-10, LOCF-12, LOCF-13, LOCF-14, LOCF-16, LVMS -2, LVMS -3, LVMS -6, LVMS -7, LVMS -9, LVMS -10, LVMS -11, RPS -3, RPS -4	1.2.1 Automated process control systems in the industry	4,0
	GC -1, GC -2, GC -3, GC -4, GC -5, GC -6, GC -7, GC -8, GC -9, GC -10, GC -11, GC -12, GC -13, GC -14, GC -15, SC -1, SC-2, SC-3, SC-4, SC-5, SC-6, SC-7, SC-9, SC-	LOCF -1, LOCF-2, LOCF-3, LOCF-4, LOCF-5, LOCF-6, LOCF-7, LOCF-8, LOCF-9, LOCF-13, LOCF -15, LVMS -1, LVMS -2,	1.2.2 Research practice	6,0

	10, SC-11, SC-12, SC-14, SC-15, SC-16, SC-17	LVMS -3, LVMS -4, LVMS -6, LVMS -7, LVMS -8, LVMS -10, LVMS -11, RPS -1, RPS -2, RPS -3, RPS -4		
	GC -1, GC -2, GC -3, GC -4, GC -5, GC -6, GC -7, GC -8, GC -9, GC -10, GC -11, GC -12, GC -14, SC-1, SC-2, SC-3, SC-4, SC-5, SC-6, SC-7, SC-8, SC-9, SC-10, SC-11, SC-12	LOCF -1, LOCF-2, LOCF-3, LOCF-5, LOCF-6, LOCF-9, LOCF-10, LOCF-11, LOCF -12, LOCF-13, LVMS -1, LVMS -2, LVMS -3, LVMS -4, LVMS -5, LVMS -6, LVMS -7, RPS -1, RPS -2, RPS -3, RPS -4	1.2.3 Preparation of Master's Degree and State Certification (SC)	23,5
			TOTAL 1.2	33,5
2.1. General training cycle (generates competencies)	GC -1, GC -2, GC -3, GC -4, GC -5, GC -6, GC -7, GC -8, GC -9, GC -10, GC -11, GC -12, GC -13, GC -15, SC -1, SC-2, SC-3, SC-4, SC-5, SC-6, SC-7, SC-9, SC-10, SC-11, SC-12, SC-14, SC-17	LOCF -1, LOCF-2, LOCF-3, LOCF-4, LOCF-5, LOCF-6, LOCF-7, LOCF-8, LOCF -9, LOCF-15, LVMS -1, LVMS -2, LVMS -3, LVMS -4, LVMS -5, LVMS -6, LVMS -7, LVMS -9, LVMS -10, LVMS -11, RPS -1, RPS -2, RPS -3, RPS -4	2.1.1 Methodology and organization of scientific research	6,0
			TOTAL 2.1	6
2.2 Training cycle (forms special (professional) competences))	GC -1, GC -2, GC -3, GC -4, GC -5, GC -6, GC -9, GC -11, GC -13, GC -14, GC -15, SC -1, SC-2, SC-3, SC-4, SC-5, SC-6, SC-7, SC-9, SC-	LOCF -1, LOCF-2, LOCF-3, LOCF-4, LOCF-5, LOCF-6, LOCF-7, LOCF-8, LOCF-9, LOCF-10,	2.2.1 Theoretical bases of technological processes of processing of combustible minerals	5,0

	10, SC-11, SC-12, SC-13, SC-14, SC-15, SC-16, SC-17	LOCF-12, LOCF-13, LOCF-14, LOCF-15, LOCF -16, LVMS -1, LVMS -2, LVMS -3, LVMS -4, LVMS -5, LVMS -6, LVMS -7, LVMS -8, LVMS -9, LVMS -10, LVMS -11, RPS -1, RPS -2, RPS -3, RPS -4		
	GC -1, GC -2, GC -6, GC -7, GC -8, GC -11, GC -13, GC -14, SC-2, SC-4, SC-5, SC-7, SC-9, SC-10, SC-11	LOCF -1, LOCF-2, LOCF-4, LOCF-7, LOCF-8, LOCF-10, LOCF-12, LVMS -1, LVMS -2, LVMS -6, LVMS -7	2.2.2 Modern technologies of modification, optimization of composition and operational properties of motor fuels	8,0
	GC -1, GC -2, GC -6, GC -7, GC -8, GC -11, GC -13, GC -14, SC-2, SC-4, SC-5, SC-7, SC-9, SC-10, SC-11	LOCF -1, LOCF-2, LOCF-4, LOCF-7, LOCF-8, LOCF-10, LOCF-12, LVMS -1, LVMS -2, LVMS -6, LVMS -7, RPS -1, RPS -2, RPS -3, RPS -4	2.2.3 Designing of fossil fuel processing industries using computer technology	3,0
	GC -1, GC -2, GC -6, GC -7, GC -8, GC -11, GC -13, GC -14, SC-2, SC-4, SC-5, SC-7, SC-9, SC-10, SC-11	LOCF -7, LOCF-8, LOCF-10, LOCF-12, LVMS -1, LVMS -2, LVMS -5, LVMS -6, RPS -4	2.2.4 Chemotomology	4,0
	GC -1, GC -2, GC -6, GC -7, GC -8, GC -11, GC -13, GC -14, SC-2, SC-4, SC-5, SC-7, SC-9, SC-10, SC-11	LOCF -1, LOCF-2, LOCF-4, LOCF-7, LOCF-8, LOCF-10, LOCF-12, LVMS -1, LVMS -2, LVMS -6, LVMS -7, RPS -4	2.2.5 Technology of processing of fossil fuels	4,5

	GC -1, GC -2, GC -6, GC -7, GC -8, GC -11, GC -13, GC -14, SC-2, SC-4, SC-5, SC-7, SC-9, SC-10, SC-11	LOCF -6, LOCF-9, LOCF-10, LOCF-11, LOCF -12, LOCF-13, LVMS -1, LVMS -2, LVMS -3, LVMS -4, LVMS -5, LVMS -6, LVMS -7, RPS -1, RPS -2	2.2.6 Student's research work	6,0
	GC -1, GC -2, GC -3, GC -6, GC -7, GC -8, GC -10, GC -11, GC -12, GC -13, SC -3, SC-8, SC-10, SC-12, SC-14, SC-17	LOCF -3, LOCF-7, LOCF-11, LVMS -1, LVMS -2, LVMS -3, LVMS -5, LVMS -6, LVMS -7, LVMS -9, LVMS -10, LVMS -11, RPS -4	2.2.7 One type of practical training: 2.2.7.1 Assistant practice 2.2.7.2 Undergraduate manufacturing practice	4,5
			TOTAL 2.2	35
			TOTAL	90,0

Table 4. Matrix of correspondence of program competences to educational components

Code of discipline for the curriculum	1.1.1	1.1.2	1.1.3	1.1.4	1.1.5	1.1.6	1.2.1	1.2.2	1.2.3	2.1.1	2.2.1	2.2.2	2.2.3	2.2.4	2.2.5	2.2.6	2.2.7
INT	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
GC-1	+	+	+	+			+	+	+	+	+	+	+	+	+	+	+
GC-2	+	+	+	+				+	+	+	+	+	+	+	+	+	+
GC-3	+	+	+	+	+	+	+	+	+	+	+						+
GC-4	+	+	+			+	+	+	+	+	+						
GC-5	+	+	+	+	+	+	+	+	+	+	+						
GC-6	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+
GC-7	+	+	+	+	+			+	+	+		+	+	+	+	+	+
GC-8		+	+	+	+	+	+	+	+	+		+	+	+	+	+	+
GC-9		+	+	+	+			+	+	+	+						
GC-10	+	+	+	+	+	+		+	+	+							+
GC-11					+	+	+	+	+	+	+	+	+	+	+	+	+
GC-12			+		+			+	+	+							+
GC-13		+	+	+	+	+		+		+	+	+	+	+	+	+	+
GC-14		+			+	+	+	+	+		+	+	+	+	+	+	
GC-15		+	+			+	+	+		+	+						
SC-1		+	+				+	+	+	+	+						
SC-2		+	+			+	+	+	+	+	+	+	+	+	+	+	+
SC-3	+	+						+	+	+	+						+
SC-4		+				+		+	+	+	+	+	+	+	+	+	
SC-5		+			+			+	+	+	+	+	+	+	+	+	
SC-6		+				+	+	+	+	+	+						

SC-7	+				+	+		+	+	+	+	+	+	+	+	+	
SC-8			+						+								+
SC-9		+					+	+	+	+	+	+	+	+	+	+	
SC-10	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+
SC-11		+	+			+		+	+	+	+	+	+	+	+	+	
SC-12		+	+					+	+	+	+						+
SC-13	+										+						
SC-14	+	+	+	+	+	+	+	+		+	+						+
SC-15							+	+			+						
SC-16							+	+			+						
SC-17	+	+	+	+	+	+	+	+		+	+						+

Table 5. Software Matrix for Software Learning Outcomes with relevant components Educational and professional program

Code of discipline for the curriculum	1.1.1	1.1.2	1.1.3	1.1.4	1.1.5	1.1.6	1.2.1	1.2.2	1.2.3	2.1.1	2.2.1	2.2.2	2.2.3	2.2.4	2.2.5	2.2.6	2.2.7
<i>LOCF -1.</i>		+	+			+	+	+	+	+	+	+	+		+		
<i>LOCF -2.</i>		+	+					+	+	+	+	+	+		+		
<i>LOCF -3.</i>	+	+	+			+	+	+	+	+	+						+
<i>LOCF -4.</i>		+	+			+	+	+		+	+	+	+		+		

<i>LOCF -5.</i>	+	+						+	+	+	+						
<i>LOCF -6.</i>		+				+	+	+	+	+	+					+	
<i>LOCF -7.</i>	+	+	+			+	+	+		+	+	+	+	+	+		+
<i>LOCF -8.</i>	+	+						+		+	+	+	+	+	+		
<i>LOCF -9.</i>					+	+	+	+	+	+	+					+	
<i>LOCF -10.</i>					+	+	+		+		+	+	+	+	+	+	
<i>LOCF -11.</i>			+	+					+							+	
<i>LOCF -12.</i>						+	+		+		+	+	+	+	+	+	
<i>LOCF -13.</i>							+	+	+		+					+	
<i>LOCF -14.</i>	+						+				+						
<i>LOCF -15.</i>		+			+	+		+		+	+						
<i>LOCF -16.</i>							+				+						
<i>LVMS -1.</i>	+	+	+					+	+	+	+	+	+	+	+	+	+
<i>LVMS -2.</i>	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+
<i>LVMS -3.</i>	+	+	+	+			+	+	+	+	+					+	+
<i>LVMS -4.</i>	+	+	+			+		+	+	+	+					+	
<i>LVMS -5.</i>		+	+			+			+	+	+			+		+	+
<i>LVMS -6.</i>	+	+	+			+	+	+	+	+	+	+	+	+	+	+	+
<i>LVMS -7.</i>		+		+		+	+	+	+	+	+	+	+		+	+	+
<i>LVMS 8</i>					+			+			+						
<i>LVMS -9</i>	+	+				+	+			+	+						+
<i>LVMS -10</i>	+	+		+	+	+	+	+		+	+						+
<i>LVMS -11</i>	+	+		+	+	+	+	+		+	+						+
<i>RPS -1.</i>								+	+	+	+		+			+	
<i>RPS -2.</i>								+	+	+	+		+			+	
<i>RPS -3.</i>							+	+	+	+	+		+				
<i>RPS -4.</i>					+	+	+	+	+	+	+		+	+	+		+

III - FORMS OF CERTIFICATES FOR HIGHER EDUCATION APPLICANTS

<p>Forms of attestation of applicants for higher education</p>	<p>The mandatory form of state certification is the implementation and protection of qualification (diploma) works (projects).</p> <p>The system of competencies and learning outcomes specified in Chapters IV and V. are subject to state certification.</p> <p>The main means of objective control of the degree of achievement of the final goals of education and professional training of masters is the technology of implementation and protection of qualification (diploma) works (projects), which is defined in the following documents: Regulations on EC, Guidelines for the implementation of qualification (diploma) works (projects).</p>
<p>Requirements for final qualification work (in the presence)</p>	<p>The requirements for the final qualification work are set out in the Guidelines for the completion of qualification (diploma) works (projects).</p> <p>The final qualification work is accompanied by the review of the scientific supervisor and the reviewer's review, which are responsible for checking the completeness of the tasks, the quality of the work as a whole and checking it for plagiarism.</p>
<p>Certification / Uniform Qualification Exam Requirements (exams) (in the presence)</p>	
<p>Requirements for public protection (demonstration) (in the presence)</p>	<p>Requirements for public protection are formulated in the EC Regulations and guidelines for the completion of qualification (diploma) works (projects).</p>

IV - Requirements for having an internal quality assurance system for higher education

Determined in accordance with European Standards and Recommendations for Quality Assurance in Higher Education (ESG) and Article 16 of the Law of Ukraine on Higher Education

Components of the internal quality assurance system of higher education	Definitions, references and related documents
Principles and procedures for quality assurance in education	<ul style="list-style-type: none"> - - Law of Ukraine "On Higher Education" of 01.07.2014 № 1556-VII; - - Provisional provision for the organization of educational process in SHEI USUCT (Order of the Rector SHEI USUCT of 30.11.2015 № 290); - - Honors Diploma Regulations SHEI USUCT (Order of the Rector SHEI USUCT of 25.02.2016 № 55); - - Regulations on the procedure for setting up and organizing the work of the Examination Committee SHEI USUCT (Order of the Rector of 01.04.2015 p. № 68); - - Regulations for the development of approval and review of work programs of the disciplines (Order of the Rector SHEI USUCT of 01.12.15 №291)
Monitoring and periodic review of educational programs	Annual monitoring of requirements of industry and labor market, review of educational programs, work curricula, work programs of educational disciplines. Approval of the composition of project teams for the development of educational programs (Order of the Rector SHEI USUCT of 10.03.2016 № 74)
Annual evaluation of higher education applicants	Regulations on the organization of the rectorial control of the quality of education (Order of the Rector of 17.03.2014 p. №78)
Annual evaluation of scientific-pedagogical and pedagogical staff of higher education institution	Regulations on the commission of the rectorial control of pedagogical skills of scientific and pedagogical workers of the University (Order of the Rector SHEI USUCT of 04.04.2016. №85), The procedure for applying the rating system for evaluating the activity of scientific and teaching staff SHEI USUCT (Order of the Rector of 04.06.2010 № 209 with changes to the order from 09.06.2011 № 147), The procedure for applying the rating system for evaluating the activity of departments and faculties SHEI USUCT (Order of the

	Rector of 04.06.2010. № 209). Regular publication of the results of such assessments on the official website of the institution of higher education, on information stands and in any other way
Improvement of qualification of scientific-pedagogical, pedagogical and scientific workers	Training of scientific and pedagogical staff shall be upgraded according to the provision approved by the order MESU of 24.01.2013p. № 48 and Regulations on training and training of pedagogical and scientific-pedagogical staff SHEI USUCT (Order of the Rector SHEI USUCT of 28.05.2016. №105)
Availability of necessary resources to organize the educational process	Educational, logistical and personnel support meets the license requirements (Resolution of the Cabinet of Ministers of Ukraine from 30.12.2015. № 1187) educational activities. License Series AE №636496. Certificates in the areas of training and specialties.
Availability of information systems for effective management of the educational process	Provisional provision for the organization of educational process in SHEI USUCT (Order of the Rector SHEI USUCT of 30.11.2015 № 290) is supported by the Information-analytical system of control of the educational process, which consists of the subsystems: Entrant, Educational process.
Publicity of information on educational programs, degrees of higher education and qualification	Information about educational programs, higher education degrees and qualifications is publicly available and fully available on the official web-portal of the University http://udhtu.com.ua
Preventing and detecting academic plagiarism	Verification of completeness of tasks, quality of work in general and its verification for plagiarism is carried out by the teacher - the leader of course or diploma work (project) in the established order using the appropriate software.