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

Rector of SHEI USUCT
_____ O.A. Pivovarov
"___" _____ 2016

EDUCATION PROFESSIONAL PROGRAM

The first (bachelor) level
(name of higher education level)

Bachelor
(name of degree awarded)

KNOWLEDGE FIELD 1 8 Manufacturing and Technology
(code and domain name)

SPECIALTY 1 8 6 Publishing and printing
(code and specialty name)

SPECIALIZATION Materials of publishing and printing industries

VARIATIVE PART Materials of printing and printing industries

Approved at the meeting
of the Academic Council
of the State University of
Chemical Technology
from _____ _____ 2016
Protocol No. ___

Dnipro

2016

Letter of approval EDUCATIONAL PROFESSIONAL PROGRAM	
Higher education level	The first (bachelor) level
Branch of knowledge	1 8 Manufacturing and Technology
Specialty	1 8 6 Publishing and printing
Specialization	Materials of publishing and printing productions
Variation part	Materials of publishing and printing productions
"AGREED"	"DEVELOPERS"
First Vice-Rector, Chairman of the Scientific and Methodological Council of the State University of chemical technology _____ Goleus VI (signature) (surname and initials) "____" _____ 2016	Project Team Leader _____ Sverdlikovskaya OS (signature) (surname and initials) "____" _____ 2016
Head of NOC _____ Smotraev RV (signature) (surname and initials) "____" _____ 2016	Project team members _____ Tomilo VI (signature) (surname and initials) "____" _____ 2016
Scientific and methodical department _____ __ Fomenko GV (signature) (surname and initials) "____" _____ 2016	_____ Shapka V.H. (signature) (surname and initials) "____" _____ 2016
Dean of the Faculty of HMC _____ Ovcharov VI (signature) (surname and initials) "____" _____ 2016	
Head of Department _____ _ Burmistr MV (signature) (surname and initials) "____" _____ 2016	The educational-professional program was enacted by the order of the Rector No. _____ of ___ _____ 2016.

I. PROFILE OF THE BACHELOR EDUCATION PROFESSIONAL PROGRAM

specialty " Publishing and Printing "

Program Profile (General Information)	
Full name of the qualification in the original language	Bachelor of Publishing and Printing Specialization Materials of publishing and printing productions
The official name of the educational program	Educational professional bachelor's program in publishing and printing
Type of diploma and scope of the educational program	Bachelor's Degree in Publishing and Printing , single (double, joint with relevant contracts, training programs);240 ECTS credits
Full name of higher education institution awarding the qualification	State Higher Educational Institution "Ukrainian State University of Chemical Technology"
Accrediting organization	Accreditation Commission of Ukraine .
Accreditation period	Accredited 20 13 g. This rtyfikat the accreditation Sun I-IN№0423 206 valid until July 1 201 7 p.
Cycle / level	Ukraine NLC - 6 level, FQ -EHEA - first cycle (First cycle) , EQF-LLL - 6 level (Level 6)
Prerequisites	Complete General Secondary Education, Elementary Education (Bachelor's), Junior Specialist Education
Language (s) of teaching	Ukrainian language
AND	**The purpose of the educational program**
The purpose of the educational program	To provide students with knowledge, skills and understanding in the field of chemical technology to solve specialized and practical problems related to the development, production and / or certification of chemicals, as well as materials and products based on them
B.	**Characteristics of the educational program**
Subject area (field of knowledge, specialty)	Knowledge Area 1 8 - *Manufacturing & Technology :* specialty 1 8 6 - *Publishing and printing* specialization - *Printing and Publishing Materials*
The main focus of the program and specialization	General higher education in manufacturing and technology .

Orientation of the program	Professionally (practically) oriented .
Features and differences	The program is aimed at publishing and printing and chemical technologies for production of materials for publishing and printing, which is determined by the list of disciplines in the unit of free choice of students and the cycle of professional training.
WITH	**Ability to find employment and further education**
Employment ability	Jobs for high-tech enterprises publishing and printing, chemical-technological profile enterprises chemical s production of materials for printing and related industries; scientists in research organizations, scientific centers, laboratories.
Further training	Studying at the second educational level program in the field of chemical technology.
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 the diploma qualification work.
IS	**Software competencies**
Integral competence	*Buck and laurel (level 6):* The ability to solve complex problems and specialized practical problems of chemical technology and publishing and printing or during training, which involves the use of certain theories and methods of production and technology and is characterized by complexity and uncertainty conditions.
General competencies (ZK)	*ZK-1.* Ability to apply knowledge in practical situations. *ZK-2.* Ability to plan and manage time. *ZK-3.* Knowledge and understanding of the subject area and understanding of professional activity. *ZK-4.* Ability for written and oral communication in Ukrainian (professional direction). ZK-5. Ability to communicate in a foreign language. ZK-6.To use of information and communication technologies. ZK-7. Ability to learn and be modernly trained. ZK-8. The ability to be critical and self-critical. ZK-9. Interpersonal skills. ZK-10. Knowledge of national history, culture, economy and law, sufficient to understand the cause and effect relationships of society and the ability to use them in professional and social activities . ZK-11. Appreciation and respect for diversity and multiculturalism. ZK-12. Commitment to security. ZK-13. Determination and perseverance about the tasks and

	responsibilities. ZK-14. The desire to preserve the environment. ZK-15. Ability to use basic knowledge of fundamental sciences to the extent necessary for the theoretical development of vocational-oriented disciplines and the solution of practical problems in production and technology .
Special (specialty, subject) competences (IC)	SK-1. Ability to demonstrate knowledge and understanding of basic facts, concepts, principles and theories pertaining to publishing and printing . SK-2. Ability to interpret data from laboratory observations and measurements in terms of their significance and to correlate them with relevant theory. SK-3. Ability to possess methods of observation, description, identification and classification of objects of chemical technology and industrial production. SK-4. Sufficient knowledge of English to be able to read, write and present papers, as well as communicate with other scholars. SK-5. Calculation and data processing skills related to chemical and publishing information. SK-6. Information retrieval skills for primary and secondary sources of information, including on information retrieval systems through online search. Ability to select and use appropriate equipment, tools and methods for the implementation and control of chemical and printing production. SK-7. The ability and use of modern computer and communication methods in chemical technology. Ability to have computer skills at the user level, use information technology to solve experimental and practical tasks in the field of professional activity. SK- 8 . Communicativeness in terms of the ability to interact with others and participate in teamwork. SK-9. Calculation skills, including aspects such as error analysis, order of validity, and correct use of units of measurement. SK-10. Skills in handling chemical materials safely, taking into account their physical and chemical properties, including any specific hazards associated with their use. SK-11. Training skills required for continuous professional development. SK-12. To give out the results of the research activity in the form of a scientific report, report, article. SK-13. Ability to use theoretical knowledge and practical skills of natural sciences to master the basics of theory and methods of chemical and technological research SK-14. Ability to use professionally profiled knowledge, skills and competences in natural sciences, manufacturing and technology to analyze, evaluate and design technological processes and equipment using traditional and alternative raw materials.

F	Program learning outcomes
Learning outcomes in the cognitive (cognitive) field	RKS-1. To select and apply knowledge and understanding of chemistry to solve qualitative and quantitative problems in chemical or publishing production
	RKS-2.To classify and analyze problems of different nature and plan for solving them
	RKS-3.To evaluate the impact of technological factors on the composition of the final product
	RKS-4.To evaluate the risks associated with the use of chemicals and laboratory testing and quality control of chemical raw materials and finished (commodity) publishing and printing products
	RKS-5.To summarize the data obtained from laboratory observations and measurements in terms of their significance and relate them to the relevant theory
	RKS-6. To establish the connection of the obtained data with the results of mathematical modeling of chemical and chemical-technological processes
	RKS-7.To explain the causes of risks associated with the use of chemicals and laboratory procedures
	RKS-8. To carry out qualitative and quantitative analysis of substances of inorganic, organic and biological origin, using appropriate methods of general and inorganic, organic, analytical, physical and colloidal chemistry.
	RKS-9. To use modern information and communication technologies for search, calculations, creation of graphic and text documents, for mathematical analysis and statistical processing in research and design
	RKS-10. To carry out feasibility study of chemical production (determination of the need for the target product and calculation of production capacity), to have methods of improving the technological process, to understand theoretical and practical approaches to the creation and management of production
	RKS-11.To select appropriate technological equipment and graphically depict the technological process, using computer-aided design systems for the development of technological and equipment scheme of chemical and technological industries.
Results of training in the value-motivational sphere	*RCMS-1.To* meet the requirements of professional ethics in the workplace
	RCMS-2.To participate in the discussion of the results of different types of work (pilot, search, project, etc.)
	RCMS-3.To desire to work independently
	RCMS-4.To ask questions in discussions with colleagues, teachers
	RCMS-5.To form an equal treatment of students with different opportunities in the group

	RCMS-6.To demonstrate acquired skills in foreign language when creating scientific and project documentation
	RCMS-7.To present the results of different types of work (pilot, search, project, etc.) in your native and one of the main European languages
	RCMS-8.To organize workplace safety measures
	RCMS-9.To understand scientific and technical texts in your native and one of the major European languages
Learning outcomes in the psychomotor field	*RPS-1.* Repeatedly reproduce the results of the experiments to obtain reliable values and calculate the error of the experiment
	RPS-2.To comply with workplace safety

II. DEFINITION 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

Number on a / c	Subjects	Loans are required	Credits are extra	Hours	Semester	Tetramester	Final control
	General training cycle (generates competencies)						
1.1.1	History of Ukraine	3.0	0.0	90	1	1,2	copies
1.1.2	Ukrainian (professional)	3.0	0.0	90	4	7.8	copies
1.1.3	Philosophy	3.0	1.0	120	3	5,6	copies
1.1.4	History of Ukrainian Culture	2.0	0.0	60	2	4	copies
1.1.5	Foreign language (professional)	5 , 0	3.0	240	1,2	1,2,3,4	copies
1.1.6	Higher mathematics	9.0	0 , 0	27 0	1,2	1,2,3,4	copies
1.1.7	Computational Mathematics and Programming	6 , 0	0 , 0	1 8 0	4	7.8	copies
1.1.8	Physics	7 , 0	0 , 0	21 0	2.3	3,4,5,6	copies
1.1.9	General and inorganic chemistry	6 , 0	0.0	1 80	1	1,2	copies
1.1.10	Organic chemistry	7 , 0	0.0	21 0	2	3.4	copies

1.1.11	Ecology	2 , 0	0.0	60	1	1	credit
1.1. 12	Physically andculture (beyond the loan)						
2.1.1	Politology	0.0	2.0	60	2	3	credit
2.1.2	Economic theory	0.0	2.0	60	4	7	f IF .credit
2.1.3	science of law	0.0	2.0	60	4	8	credit
2.1.4	Fundamentals of information technology in printing	0.0	6 , 0	18 0	1	1 , 2	copies
2.1.5	Fundamentals of designing chemical and printing industries	0.0	4.0	120	4	15	credit
	TOGETHER for a cycle	***5 3***	***20***	***2 19 0***			
Training cycle (forms special (professional) competences)							
1.2.1	Engineering graphics	4 , 0	0 , 0	120	1,2	1, 2, 3, 4	f IF .credit
1.2.2	Electrochemistry in printing processes	4 , 0	0 , 0	12 0	5,6	10, 11	copies
1.2.3	Photochemistry of photosensitive materials	6 , 0	0.0	18 0	7	13.14	copies
1.2.4	Metrology, standardization, theory of quality of materials and technologies	6 , 0	0 , 0	18 0	7 , 8	14, 15	copies
1.2.5	Control and management of chemical and technological processes	4 , 0	0 , 0	120	7	13, 14	copies
1.2.6	Economics, organization and management of chemical enterprises	4 , 0	0 , 0	120	5	9, 10	copies
1.2.7	Analytical chemistry	6.0	0.0	1 80	3	5, 6	f IF .credit

1.2.8	Chemistry and physics of polymers	8.0	0, 0	24 0	6	11, 12	f IF .credit
1.2.9	Physical and colloidal chemistry	6 , 0	0 , 0	18 0	4	7, 8	f IF .credit
1.2.10	Basics of printing	12 , 0	0.0	36 0	3.4	5,6,7	copies
1.2.11	Life Safety	2.0	0.0	60	1	2	credit
1.2.12	Basics of labor protection	1.5	1.5	90	7	14	copies
1.2.13	The theory of photographic processes	7 , 0	0.0	21 0	4.5	8.9	f IF .credit
1.2.1 4	Color theory and color reproduction	5 , 0	0 , 0	1 5 0	4	7.8	copies
1.2.1 5	Photographic materials and their properties	11 , 0	0 , 0	33 0	5, 6	9,10 11, 12	copies
1.2.1 6	Polygraphic materials and their properties	11 , 0	0 , 0	33 0	4	7, 8	copies
1.2.1 7	Internship	6.0	0.0	180	8	16	f IF .credit
1.2.1 8	Preparation of bachelor's qualification work and state certification	9.0	0.0	270	8	16	YES
2.2. 1	Basics of the scientific research	0 , 0	3 , 0	90	6	12	credit
2.2. 2	Advertising and design in printing	0 , 0	5 , 0	1 5 0	2	3 , 4	f IF .credit
2.2. 3	Manufacturing technology of packaging and packaging	0 , 0	4 , 0	120	7	13	diff. credit
2.2. 4	Technology and equipment of production of photographic	0 , 0	12 , 0	360	6,7	11, 12 , 13	copies

	materials						
2.2. 5	Technology and equipment of production of materials of publishing and printing productions	0 , 0	10 , 0	300	7 , 8	13, 14 , 15	copies
2.2. 6	Desktop publishing systems	0 , 0	3 , 0	9 0	3	5,6	credit
2.2. 7	Material Science	0 , 0	2 , 0	6 0	5	9.10	credit
2.2. 8	Applied mechanics	0 , 0	5 , 0	1 5 0	3	5,6	copies
2 .2. 9	Electrical Engineering and Fundamentals of Electronics	0 , 0	3 , 0	9 0	5	9.10	f IF . credit
2 .2. 10	One of the sample modules	0.0	6.0	180	7.8	14.15	copies
	Module 1						
	Technology and equipment of processing of photographic materials						
	Module 2						
	Nanosystems and nanomaterials						
	TOGETHER for a cycle	***112.5***	***54.5***				
	COMPULSORY LOANS TOGETHER	***1 65 , 5***		***4965***			
	SELECTED TOTAL LOANS	***74 , 5***		***2235***			
	THE TOTAL AMOUNT	***240***		**7200**			

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

№	Preparation cycle	Higher education student load (credits /%)

p / n		Compulsory components of educational and professional program	Selective components of a professional education program	Total for the whole term of study
1.	General training cycle (generates competencies)	5 3	20	73 / 3 0 , 4
2.	Training cycle (forms special (professional) competences)	112.5	54.5	167 / 69.6
Total for the whole term of study		1 65 5 / 69	74 , 5 / 31	240 /100

Table 3. List of disciplines of the educational and professional training program for first-time (bachelor) level students, training time in ECTS credits by training cycles, and a list of competences and learning outcomes formed

Training cycles	Competency Codes	Codes of learning outcomes	List of disciplines	ECTS credits
1	2	3	4	5
1.1. The cycle of general training (general competencies forms - LTER)	ZK-1, ZK-2, ZK-8, ZK-9, ZK-10, ZK-11	RCMS-4, RCMS-5	1.1.1. History of Ukraine	3.0
	ZK-1, ZK-3, ZK-4, ZK-9, ZK-11	RCMS-4, RCMS-6, RCMS-7, RCMS-8, RCMS-9, RCS-9	1.1.2. Ukrainian (professional)	3.0
	ZK-1, ZK-2, ZK-7, ZK-8, ZK-9, ZK-11	RCMS-1, RCMS-3, RCMS-4, RCMS-5	1.1.3. Philosophy	4.0
	ZK-1, ZK-7, ZK-10, ZK-11	RCMS-1, RCMS-3, RCMS-4, RCMS-5	1.1.4. History of Ukrainian Culture	2.0
	ZK-1, ZK-3, ZK-5, ZK-6, ZK-9, ZK-11, SK-4	RCMS-6, RCMS-7, RCMS-9, RCC-9	1.1.5. Foreign language (professional)	8.0
	ZK-1, ZK-3, ZK-8, ZK-15, SK-1, SK-2, SK-13	RKS-6, RKS-9, RPS-1	1.1.6. Higher mathematics	9 , 0
	ZK-1, ZK-2, ZK-3, ZK-6, ZK-8, ZK-13, ZK-15, SK-1, SK-2, SK-5	RKS-6, RKS-9, RKS-8, RPS-1	1.1.7. Computational Mathematics and Programming	6.0
	ZK-1, ZK-2, ZK-3, ZK-6, ZK-8, ZK-12, ZK-13, ZK-15, SK1, SK-2, SK-13	RKS-6, RKS-9, RKS-8, RPS-1	1.1.8. Physics	7 , 0
	ZK-1, ZK-3, ZK-8, ZK-12, ZK-13, ZK-15, SK-1, SK-2, SK-3, SK-10, SK-13	RKS-1, RKS-3, RKS-8, RKS-10, RCMS-4, RPS-1, RPS-2	1.1.9. General and inorganic chemistry	6 , 0

	ZK-1, ZK-3, ZK-8, ZK-12, ZK-13, ZK-15, SK-1, SK-2, SK-3, SK-10, SK-13	RKS-1, RKS-3, RKS-8, RKS-10, RCMS-4, RPS-1, RPS-2	1.1.10. Organic chemistry	7.0
	ZK-1, ZK-3, ZK-8, ZK-12, ZK-13, ZK-14, ZK-15, SK-2	RKS-1, RKS-3, RKS-4, RKS-8, RKS-10, RCMS-4, RCMS-8, RPS-1, RPS-2	1.1.11. Ecology	2 , 0
	ZK-1, ZK-8	RCMS-1, RCMS-3, RCMS-4, RCMS-5	2.1.1. Politology	2.0
	ZK-1, ZK-8, ZK-10	RCMS-1, RCMS-3, RCMS-4, RCMS-5 , RCS-10	2.1.2. Economic theory	2.0
	ZK-1, ZK-10	RCMS-1, RCMS-3, RCMS-4, RCMS-5 , RCMS-8, RKS-10, RPS-2	2.1.3. science of law	2.0
	ZK-1, ZK-2, ZK-3, ZK-6, ZK-7, ZK-8, ZK-9, ZK-10, ZK-11, ZK-12, ZK-13, ZK-14, ZK- 15, SK-1, SK-2, SK-3, SK-5, SK-6, SK-7, SK-8, SK-9, SK- 11, SK-13, SK-14	RKS-1, RKS-7, RKS-9, RKS-10, RCMS-1, RCMS-2, RCMS-3, RCMS-4,	2.1.4. Fundamentals of information technology in printing	6 , 0
	ZK-1, ZK-2, ZK-3, ZK-6, ZK-7, ZK-8, ZK-9, ZK-10, ZK-11, ZK-12, ZK-13, ZK-14, ZK- 15, CK-1, CK-2, CK-3, CK-5, CK-6, CK-7, CK-8, CK-9, CK-10, CK-11, CK-12, CK-13, SK-14	RKS-1, RKS-4, RKS-9, RCMS-1, RCMS-2, RCMS-3	2.1.5. Fundamentals of designing chemical and printing industries	4.0
			TOTAL 1.1	**73**
1.2 Training cycle	ZK-1, ZK-2,, ZK-7, ZK-13, SK-11, SK-12	RCMS-2, RCMS-3, RCMS-4	1.2.1. Engineering graphics	4.0

(forms special (professional) competences)	ZK-1, ZK-2, ZK-3, ZK-6, ZK-7, ZK-8, ZK-12, ZK-13, ZK-14, ZK-15, SK-1, SK-2, SK- 3, SK-5, SK-6, SK-7, SK-8, SK-9, SK-10, SK-11, SK-12, SK-13, SK-14	RKS-1, RKS-2, RKS-3, RKS-7, RCMS-1, RCMS-2, RCMS-3, RCMS-8, RPS-1, RPS-2	1.2.2. Electrochemistry in printing processes	4 , 0
	ZK-1, ZK-2, ZK-3, ZK-6, ZK-7, ZK-8, ZK-12, ZK-13, ZK-14, ZK-15, SK-1, SK-2, SK- 3, SK-5, SK-6, SK-7, SK-8, SK-9, SK-10, SK-11, SK-12, SK-13, SK-14	RKS-1, RKS-2, RKS-3, RKS-7, RCMS-1, RCMS-2, RCMS-3, RCMS-8, RPS-1, RPS-2	1.2.3. Photochemistry of photosensitive materials	6 , 0
	ZK-1, ZK-2, Z K-3, ZK-5 ZK-6, ZK-7, ZK-8, ZK-9, SK-1, SK-2, SK-3, SK-4, SK- 5, SK-6, SK-7, SK-8, SK-11	RKS-1, RKS-6, RKS-9, RCMS-2, RCMS-3, RCMS-4, RCMS-5, RCMS-6	1.2.4 Metrology, standardization, theory of quality of materials and technologies	6 , 0
	ZK-1, ZK-2, ZK-3, ZK-6, ZK-7, ZK-8, ZK-12, ZK-13, ZK-14, ZK-15, SK-1, SK-2, SK- 3, SK-5, SK-6, SK-7, SK-8, SK-9, SK-10, SK-11, SK-12, SK-13, SK-14	RKS-1, RKS-2, RKS-3, RKS-7, RKS-10, RCMS-1, RCMS-2, RCMS-3, RCMS-8, RPS-1, RPS-2	1.2.5. Control and management of chemical and technological processes	4.0
	ZK-1, ZK-2, ZK-3, ZK-4, ZK-6, ZK-7, ZK-8, ZK-9, ZK-10, ZK-11, ZK-13, ZK-15, SK- 3, SK-4, SK-6, SK-7, SK-8, SK-11, SK-13	RCMS-1, RCMS-3, RCMS-4, RCMS-5, RCS-10	1.2.6. Economics, organization and management of chemical enterprises	4.0
	ZK-1, ZK-2, ZK-3, ZK-4, ZK-6, ZK-7, ZK-8, ZK-9, ZK-11, ZK-12, ZK-13, ZK-	RKS-1, RKS-3, RKS-8, RKS-10, RCMS-4, RPS-1, RPS-2	1.2.7. Analytical chemistry	6.0

	14, SK- 1, SK-2, SK-3, SK-5, SK-6, SK-7, SK-8, SK-9, SK-10, SK-11, SK-12, SK-13			
	ZK-1, ZK-2, ZK-3, ZK-4, ZK-6, ZK-7, ZK-8, ZK-9, ZK-11, ZK-12, ZK-13, ZK-14, SK- 1, SK-2, SK-3, SK-5, SK-6, SK-7, SK-8, SK-9, SK-10, SK-11, SK-12, SK-13	RKS-1, RKS-3, RKS-8, RKS-10, RCMS-4, RPS-1, RPS-2	1.2.8. Chemistry and physics of polymers	8 , 0
	ZK-1, ZK-2, ZK-3, ZK-4, ZK-6, ZK-7, ZK-8, ZK-9, ZK-11, ZK-12, ZK-13, ZK-14, SK- 1, SK-2, SK-3, SK-5, SK-6, SK-7, SK-8, SK-9, SK-10, SK-11, SK-12, SK-13	RKS-1, RKS-3, RKS-8, RKS-10, RCMS-4, RPS-1, RPS-2	1.2.9. Physical and colloidalchemistry	6 , 0
	ZK-1, ZK-2, ZK-3, ZK-4, ZK-6, ZK-7, ZK-8, ZK-9, ZK-11, ZK-12, ZK-13, ZK-14, SK- 1, SK-2, SK-3, SK-5, SK-6, SK-7, SK-8, SK-9, SK-10, SK-11, SK-12, SK-13	RKS-1, RKS-3, RKS-8, RKS-10, RCMS-4, RPS-1, RPS-2	1.2.10. Basics of printing	12
	ZK-1, ZK-4, ZK-7, ZK-8, ZK-12, ZK-13, SK-10	RKS-2, RKS-4, RKS-7, RCMS-1, RCMS-8, RCMS-9, RPS-2	1.2.11. Life Safety	2.0
	ZK-1, ZK-2, ZK-4, ZK-7, ZK-8, ZK-9, ZK-12, ZK-14, SK-10, SK-12	RKS-2, RKS-4, RKS-7, RCMS-1, RCMS-8, RCMS-9, RPS-2	1.2.12. Basics of labor protection	3.0

	ZK-1, ZK-2, ZK-3, ZK-4, ZK-6, ZK-7, ZK-12, ZK-14, ZK-15, KS-1, SK-3, SK -4, SK - 6, SK -7, SK -8, SK - 10, SK -11, SK -14	RKS-1, RKS-2, RKS-3, RKS-4, RKS-7, RKS-9, RKS-10, RKS-11, RCMS-2, RCMS-3, RCMS-6, RCMS-7, RCMS- 9	1.2.13. The theory of photographic processes	7 , 0
	ZK-1, ZK-2, ZK-3, ZK-4, ZK-7, ZK-8, ZK-12, ZK-13, ZK-15, SK-1, SK-2, SK-3, SK- 4, SK-5, SK-6, SK-7, SK-9, SK-10, SK-11, SK-12, SK-13	RKS-2, RKS-3, RKS-4, RKS-5, RKS-6, RKS-8, RKS-9, RCMS-1, RCMS-2, RCMS-3, RCMS-4, RCMS-6, RCMS- 7, RCMS-9, RPS-1, RPS-2	1.2.14. Color theory and color reproduction	5.0
	ZK-1, ZK-3, ZK-4, ZK-12, ZK-14, ZK-15, SK-1, SK-4, SK-6, SK-8, SK-10, SK-11, SK- 14	RKS-1, RKS-2, RKS-9, RKS-11, RCMS-1, RCMS-3, RCMS-6, RCMS-9	1.2.15. Photographic materials and their properties	11,0
	ZK-1, ZK-3, ZK-4, ZK-7, ZK-12, ZK-14, ZK-15, SK-1, SK-3, SK-4, SK-6, SK-7, SK- 8, SK-10, SK-11, SK-13, SK-14	RKS-1, RKS-2, RKS-9, RKS-11, RCMS-3, RCMS-9	1.2.16.Printing materials and their properties	11,0
	ZK-1, ZK-2, ZK-3, ZK-4, ZK-7, ZK-8, ZK-12, ZK-13, ZK-15, SK-1, SK-2, SK-3, SK- 4, SK-5, SK-6, SK-7, SK-9, SK-10, SK-11, SK-12, SK-13	RKS-2, RKS-3, RKS-4, RKS-5, RKS-6, RKS-8, RKS-9, RCMS-1, RCMS-2, RCMS-3, RCMS-4, RCMS-6, RCMS- 7, RCMS-9, RPS-1, RPS-2	2.2.1. Basics of the scientific research	3.0
	ZK-1, ZK-2, ZK-3, ZK-4, ZK-6, ZK-7, ZK-8, ZK-9, ZK-11, ZK-12, ZK-13, ZK-14, SK- 1, SK-2, SK-3, SK-5, SK-6, SK-7, SK-8, SK-9,	RKS-1, RKS-3, RKS-8, RKS-10, RCMS-4, RPS-1, RPS-2	2.2. 2. Advertising and design in printing	5.0

	SK-10, SK-11, SK-12, SK-13			
	ZK-1, ZK-2, ZK-3, ZK-6, ZK-7, ZK-8, ZK-9, ZK-10, ZK-11, ZK-12, ZK-13, ZK-14, ZK- 15, CK-1, CK-2, CK-3, CK-5, CK-6, CK-7, CK-8, CK-9, CK-10, CK-11, CK-12, CK-13, SK-14	RKS-1, RKS-2, RKS-5, RKS-6, RKS-7, RKS-9, RCMS-2, RCMS-3, RCMS-4, RCMS-7, RCMS-8, RPS-1	2.2.3. Manufacturing technology of packaging and packaging	4.0
	ZK-1, ZK-2, ZK-3, ZK-6, ZK-7, ZK-8, ZK-9, ZK-10, ZK-11, ZK-12, ZK-13, ZK-14, ZK- 15, CK-1, CK-2, CK-3, CK-5, CK-6, CK-7, CK-8, CK-9, CK-10, CK-11, CK-12, CK-13, SK-14	RKS-1, RKS-2, RKS-3, RKS-4, RKS-5, RKS-6, RKS-7, RKS-8, RKS-9, RCMS-2, RCMS-3, RCMS-4, RCMS- 7, RCMS-8, RPC-1, RPC-2	2.2.4. Technology and equipment of production of photographic materials	12,0
	ZK-1, ZK-2, ZK-3, ZK-4, ZK-7, ZK-8, ZK-12, ZK-13, ZK-15, SK-1, SK-2, SK-3, SK- 4, SK-5, SK-6, SK-7, SK-9, SK-10, SK-11, SK-12, SK-13	RKS-2, RKS-3, RKS-4, RKS-5, RKS-6, RKS-8, RKS-9, RCMS-1, RCMS-2, RCMS-3, RCMS-4, RCMS-6, RCMS- 7, RCMS-9, RPS-1, RPS-2	2.2.5. Technology and equipment of production of materials of publishing and printing productions	10,0
	ZK-1, ZK-2, ZK-3, ZK-6, ZK-7, ZK-8, ZK-9, ZK-10, ZK-11, ZK-12, ZK-13, ZK-14, ZK- 15, SK-1, SK-2, SK-3, SK-5, SK-6, SK-7, SK-8, SK-9, SK-11, SK-13, SK-14	RKS-1, RKS-7, RKS-9, RKS-10, RCMS-1, RCMS-2, RCMS-3, RCMS-4,	2.2.6. Desktop publishing systems	3.0
	ZK-1, ZK-3, ZK-4, ZK-15, SK-1, SK-4, SK-6, SK-10,	RKS-1, RKS-9, RKS-11, RCMS-3	2.2. 7 . Material Science	2.0

	SK-11, SK-13, SK-14			
	ZK-3, ZK-4, ZK-15, SK-1, ZK-6, ZK-7, ZK-11, ZK-14	RKS-1, RKS-2, RKS-9, RKS-11, RCMS-3	2.2. 8 . Applied mechanics	5 , 0
	ZK-1, ZK-3, ZK-4, ZK-6, ZK-7, ZK-15, SK-1, SK -2, SK -6, SK -7, SK -11, SK -13	RKS-2, RKS-9, RKS-11, RCMS-3, RCMS-9, RPS-2	2.2. 9 . Electrical Engineering and Fundamentals of Electronics	3.0
			2.2. 10 . One of the sample modules	6.0
			Module 1	
	ZK-1, ZK-3, ZK-4, ZK-7, ZK-15, SK-1, SK-2, SK-3, SK-4, SK-5, SK-6, SK-9, SK- 11, SK-14	RKS-1, RKS-2, RKS-5, RKS-8, RKS-9, RKS-11, RCMS-1, RCMS-2, RCMS-3, RCMS-7, RCMS-9, RPS-1	Technology and equipment of processing of photographic materials	
			Module 2	
	ZK-1, ZK-3, ZK-4, ZK-7, ZK-15, SK-1, SK-2, SK-3, SK-4, SK-5, SK-6, SK-7, SK- 8, SK-10, SK-11, SK-14	RKS-1, RKS-2, RKS-3, RKS-5, RKS-6, RKS-9, RKS-11, RCMS-3, RCMS-9	Nanosystems and nanomaterials	
	ZK-1, ZK-2, ZK-3, ZK-4, ZK-7, ZK-8, ZK-12, ZK-13, ZK-14, ZK-15, SK-1, SK-2, SK- 3, SK-5, SK-6, SK-7, SK-10, SK-11, SK-13	RKS-1, RKS-2, RKS-3, RKS-4, RKS-5, RKS-7, RKS-8, RKS-10, RKS-11, RCMS-1, RCMS-2, RCMS-3, RCMS- 4, RCMS-5, RCMS-6, RCMS-8, RCMS-9, RPS-2	1.2.1 7 . Internship	6.0
	ZK-1, ZK-3, ZK-4, ZK-7, ZK-8, ZK-12, ZK-14, ZK-15, SK-1, SK-2, SK-3, SK-4, SK- 5, SK-6, SK-7, SK-8, SK-9, SK-10, SK-11, SK-	RKS-2, RKS-3, RKS-4, RKS-5, RKS-6, RKS-7, RKS-8, RKS-9, RKS-10, RKS-11, RCMS-2, RCMS-3, RCMS- 4, RCMS-6, RCMS-7, RCMS-9,	1.2.1 8 . Preparation of bachelor's qualification work and state certification	9.0

	12, SK-13, SK-14	RPS-1, RPS-2		
			TOTAL 1.2	**1 67**
			THE TOTAL AMOUNT	**240**

Table 4. 1. Matrix compliance software competencies training component subjects in general training

Code of discipline according to the curriculum	1.1.1	1.1.2	1.1.3	1.1.4	1.1.5	1.1.6	1.1.7	1.1.8	1.1.9	1.1.10	1.1.11	2.1.1	2.1.2	2.1.3	2.1.4	2.1.5
IR	+															
ZK-1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ZK-2	+		+				+	+							+	+
ZK-3		+			+	+	+	+	+	+	+				+	+
ZK-4		+														
ZK-5					+											
ZK-6					+		+	+							+	+
ZK-7			+	+											+	+
ZK-8	+		+			+	+	+	+	+	+	+	+		+	+
ZK-9	+	+	+		+										+	+
ZK-10	+			+									+	+	+	+
ZK-11	+	+	+	+	+										+	+
ZK-12									+	+	+				+	+
ZK-13							+	+	+	+	+				+	+
ZK-14															+	+
ZK-15						+	+	+	+	+	+				+	+

SK-1						+	+	+	+	+					+	+
SK-2						+	+	+	+	+	+				+	+
SK-3									+	+					+	+
SK-4					+											
SK-5							+	+							+	+
SK-6															+	+
SK-7															+	+
SK-8															+	+
SK-9															+	+
SK-10									+	+						+
SK-11															+	+
SK-12																+
SK-13						+			+						+	+
SK-14															+	+

Table 4.2. Matrix of correspondence of program competences to educational components of disciplines of the cycle of vocational training

1.2.5	1.2.6	1.2.7	1.2.8	1.2.9	1.2.10	1.2.11	1.2.12	1.2.13	1.2.14	1.2.15	1.2.16	2.2.1	2.2.2	2.2.3	2.2.4	2.2.5
								+								
+	+	+	+	+	+	+	+	+		+	+		+	+	+	+
+	+	+	+	+	+		+	+								
+	+	+	+	+	+			+	+	+	+	+	+	+	+	+
	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
+	+	+	+	+	+			+	+			+		+		
+	+	+	+	+	+	+	+	+	+		+	+		+	+	+
+	+	+	+	+	+	+	+									
	+	+	+	+	+	+	+									
	+															
	+	+	+	+	+				+			+				
+		+	+	+	+	+	+	+		+	+					+
+	+	+	+	+	+	+										
+		+	+	+	+		+	+	+	+	+	+				+

+	+							+		+	+		+	+	+	+
+		+	+	+	+			+	+	+	+	+	+	+	+	+
+		+	+	+	+									+	+	
+		+	+	+	+			+			+				+	+
								+		+	+		+		+	+
+		+	+	+	+										+	
+		+	+	+	+			+		+	+		+	+	+	+
+		+	+	+	+			+			+			+	+	+
+		+	+	+	+			+		+	+				+	+
+		+	+	+	+											
+		+	+	+	+	+	+	+		+	+		+		+	+
+		+	+	+	+			+		+	+		+	+	+	+
+		+	+	+	+		+									
+		+	+	+	+					+	+		+	+		+
+								+			+		+		+	+

Table 5. 1. Software Matrix for Software Learning Outcomes by Relevant Components of General Cycle Disciplines

Code of discipline according to the curriculum	1.1.1	1.1.2	1.1.3	1.1.4	1.1.5	1.1.6	1.1.7	1.1.8	1.1.9	1.1.10	1.1.11	2.1.1	2.1.2	2.1.3	2.1.4	2.1.5
RKS-1.									+	+	+				+	+
RKS-2.																
RKS-3.									+	+	+					
RKS-4.											+					+
RKS-5.																
RKS-6.						+	+	+								
RKS-7.															+	
RKS-8.							+	+	+	+	+			+		
RKS-9.		+			+	+	+	+							+	+
RKS-10.									+	+	+		+	+	+	
RKS-11.																
RCMS -1.			+	+								+	+	+	+	+
RCMS -2.															+	+
RCMS -3.			+	+								+	+	+	+	+
RCMS -4.	+	+	+	+					+	+	+	+	+	+	+	
RCMS -5.	+	+	+	+								+	+	+		
RCMS -6.		+			+											

RTSMS 7.		+			+										
RCMS-8		+			+						+				
RCMS-9															
RPS-1.						+	+	+	+	+	+				
RPS-2.									+	+	+				

Table 5.2. Matrix for providing software learning outcomes to relevant components of the general training cycle disciplines

Code of discipline according to the curriculum	1.2.1	1.2.2	1.2.3	1.2.4	1.2.5	1.2.6	1.2.7	1.2.8	1.2.9	1.2.10	1.2.11	1.2.12	1.2.13	1.2.14	1.2.15	1.2.16	2.2.1	2.2.2	2.2.3	2.2.4	2.2.5	2.2.6	2.2.7	2.2.8	2.2.9	2.2.10
RKS-1.		+	+	+	+		+	+	+	+			+	+	+	+	+	+		+	+	+	+	+	+	
RKS-2.		+	+		+						+	+	+	+	+	+	+		+	+	+	+	+	+	+	+
RKS-3.		+	+		+		+	+	+	+			+	+						+				+		+
RKS-4.											+	+	+	+										+		+
RKS-5.																				+		+	+	+		+
RKS-6.				+																+			+	+		+
RKS-7.		+	+		+						+	+	+	+									+	+		
RKS-8.							+	+	+	+				+								+		+		+
RKS-9.				+									+		+	+	+	+	+	+	+	+	+	+	+	+
RKS-10.					+	+	+	+	+	+			+													

RKS-11.													+		+	+	+	+	+	+	+	+			+	
RCMS -1.		+	+		+	+					+	+		+	+							+			+	+
RCMS -2.	+	+	+	+	+								+	+								+	+	+		+
RCMS -3.	+	+	+	+	+	+							+		+	+	+	+	+	+	+	+	+	+	+	+
RCMS -4.	+			+		+	+	+	+	+				+									+	+		+
RCMS -5.				+		+								+												
RCMS -6.				+									+	+	+										+	+
RTSMS 7.													+	+								+	+	+		+
RCMS-8		+	+		+						+	+		+									+	+		
RCMS-9											+	+	+	+	+	+			+	+	+	+			+	+
RPS-1.		+	+		+		+	+	+	+				+								+	+	+		+
RPS-2.		+	+		+		+	+	+	+	+	+		+					+					+		+

III - FORMS OF CERTIFICATES FOR HIGHER EDUCATION PROVIDERS

Forms of attestation of applicants for higher education	The mandatory form of state certification is the implementation and protection of qualification (diploma) works (projects). The system of competencies and learning outcomes specified in Chapters IV and V. are subject to state certification. The main means of objective control of the degree of achievement of the final goals of education and professional training of masters is technology of implementation and protection of qualification (diploma) works (projects), which is defined in the following documents: Regulations on SEC, Methodological instructions for the implementation of qualification (diploma) projects (works)).
Requirements for qualification work (in the presence)	Requirements for the final qualification work are set out in the Guidelines for the implementation of qualification (diploma) projects (works). 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.
Requirements for public protection (demonstration) (in the presence)	Requirements for public protection are formulated in the Regulations on the EC and guidelines for the implementation of qualification (diploma) projects (works).

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	- Law of Ukraine “On Higher Education” of 01.07.2014 № 1556-VII; - Provisional Regulation on the Organization of the Educational Process at the State Higher Educational Institution of State University of Chemical Technology (Order of the Rector of the State University of Chemical Technology № 290 of 30.11.2015); - Regulations on diploma with honors of the State University of Chemical Technology(Order of the Rector of the State University of Chemical Technology from February 25, 2016 No. 55); - Regulations on the procedure for setting up and organizing the work of the examination commission at the State Higher Educational Institution of State University of Chemical Technology(Order of the Rector No. 68 of 01.04.2015, No. 68); - Regulations on the development of approval and revision of work programs of educational disciplines (Order of the Rector of the State Higher Educational Institution of Ukrainian State University of Chemical Technology # 291 of 01.12.15)
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. On approval of the composition of project teams for the development of educational programs (Order of the Rector of the State University of Chemical Technology from 10.03.2016 No. 74)
Annual evaluation	Regulations on the Organization of Rector Control of

of higher education applicants	Training Quality
Annual evaluation of scientific-pedagogical and pedagogical staff of a higher educational institution	Regulations on the Rector's Control Commission of pedagogical skills of scientific and pedagogical workers of the University (Order of the Rector of the State University of Chemical Technology of 04.04.2016. №85), Procedure of application of the rating system of evaluation of the activity of scientific and pedagogical workers of the State University of Chemical Technology(Ordinance of the Rector of 04.06.2010, № 209 with changes of 06.06 to 09.06.2010 .2011, № 147), Procedure for applying the rating system for evaluating the activities of the departments and departments of the State University of Chemical Technology (Order of the Rector of 20.06.2010, № 209). The 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	Improvement of qualification of scientific and pedagogical staff is carried out according to the provision approved by the order of MESU from 24.01.2013. No. 48 and the Regulations on professional development and training of pedagogical and scientific-pedagogical employees of the State University of Chemical Technology (Order of the Rector of the State University of Chemical Technology May 28, 2016 No. 105)
Availability of necessary resources to organize the educational process	Educational and methodological, logistical and personnel support of the licensed conditions (Resolution of the CM dated December 30, 2015 No. 1187) of educational activity. License Series AE No. 636496. Certificates in areas 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 in the State Higher Educational Institution of the State University of Chemical Technology (Order of the Rector of the State Educational Institution of the State University of Chemical Technology № 290) is supported by the Information-analytical system of control of the educational process, which consists of subsystems: Entrant, Educational process.

Publicity of information on educational programs, degrees of higher education and qualification	Information about educational programs, degrees of higher education and qualification is publicly and fully published 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 as a whole 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.