MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
NATIONAL TECHNICAL UNIVERSITY OF UKRAINE
"Ihor Sikorsky Kyiv Polytechnic Institute"

ТЕХНОЛОГІЇ
ДРУКОВАНИХ І ЕЛЕКТРОННИХ ВИДАНЬ

TECHNOLOGIES
OF PRINTED AND ELECTRONIC EDITIONS

EDUCATIONAL AND SCIENTIFIC PROGRAM
first (bachelor's) level of higher education

specialty	**186 Publishing and printing**
fields of knowledge	**18 Production and technologies**
qualification	**Bachelor of publishing and printing**

Kyiv – 2022

ПРЕАМБУЛА

РОЗРОБЛЕНО проєктною групою:

Керівник проєктної групи

Золотухіна Катерина Ігорівна, кандидат технічних наук, доцент, доцент кафедри технології поліграфічного виробництва

Члени проєктної групи

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За підготовку здобувачів вищої освіти за освітньою програмою відповідають кафедра технології поліграфічного виробництва та кафедра репрографії

ПОГОДЖЕНО:

Науково-методична комісія КПІ ім. Ігоря Сікорського зі спеціальності

186 Видавництво та поліграфія

Голова НМКУ 186

_____ Тетяна КИРИЧОК

(протокол № 4 від « 25 » 11 2021 р.)

Методична рада КПІ ім. Ігоря Сікорського

Голова Методичної ради

_____ Юрій ЯКИМЕНКО

(протокол № 2 від 09.12. 2021 р.)

ВРАХОВАНО:

Відгуки, рецензії, пропозиції стейкхолдерів

CONTENTS

1. EDUCATIONAL PROGRAM PROFILE

on the specialty 186 Publishing and printing

1 – General information	
Full name of the educational establishment and institute/faculty	National technical university of Ukraine "Igor Sikorsky Kyiv polytechnic institute", Publishing and printing institute
Higher education degree and the name of the qualification	Degree – bachelors Qualification – bachelor in publishing and printing
National qualification frame level	Ukrainian national qualification frame level – level 6 QF-EHEA – first cycle EQF-LLL – level 6
Official name of the educational program	Technologies of printed and electronic editions
Diploma type and educational program size	Bachelors diploma, singular, 240 credits, training term – 3 years and 10 months
Accreditations availability	The program is accredited by the National Agency for Quality Assurance of Higher Education in 2020. The certificate is valid until June 16, 2025.
Preconditions	Full general middle education level
Teaching languages	Ukrainian
Educational program viability term	Before the next accreditation happens
Web-address of the permanent educational program's location	http://vpi.kpi.ua/ https://osvita.kpi.ua/node/103
2 – Educational program goal	

The goal of the educational program is the comprehensive training of a specialist in the publishing and printing industry, able to solve complex specialized tasks and practical problems in the field of publishing and printing, to carry out and ensure professional interaction of representatives of the scientific and technical community, aimed at the integration of university education into the European educational and scientific space through the internationalization of the educational process in the conditions of sustainable innovative scientific and technical development of society, which is implemented through:
- to create all the means to train the high-qualified (perfect) professionals able to generate modern scientific knowledge and innovational technologies for the human wellbeing and able to set the proven place of Ukraine in the world's society;
- creation of conditions for comprehensive professional, intellectual, social and creative development of the individual at the highest levels of excellence in the educational and scientific environment;
- to maintain the fundamentality of professionals training based on the physical-technical model, that refers to the synthesis of deep general scientific and naturalistic knowledge and of the engineering art; to strengthen the harmonious multi-vector students education, forming them as all-ways-around developed personalities, able to get to the highest gains in their professional and general human activities, the real Ukraine patriots able to solve the complex specialized tasks and practical problems in the field of publishing and printing, characterized by complexity and conditions uncertainty.

3 – Educational program characteristics	
Subject area	Objects for learning and activities: all types of publishing and printing products – printed and electronic editions, packaging, multimedia and crossmedia informational products and other types of products publishing and printing produces; processes of processing, registry, formation, storing of the text, graphic, audio, video and other multimedia information; production and spreading the products made in publishing in printing. Learning goals: To prepare the competitive specialists, able to resolve the complex specialized tasks and practical problems in the field of publishing and printing, those characterized by the complexity and conditions uncertainty. Theoretical contents of the subject area: definitions, concepts, principles of publishing treatment of different information types; technological processes development and realization; projecting and setup of the production; creation and improvement of all types of products in publishing and printing; information security in printing; resources reservation in printing. Methods, means and technologies: methods and technologies of construction, producing, testing, and control of all types of products in publishing and printing; methods of calculus, designing and realization of the technological processes; methods of securing the printed products. Instruments and equipment: materials of publishing and printing production, software-hardware complexes, controlling equipment, projecting and modelling of the technological processes and all the types of products in publishing and printing; means of technological, informational, instrumental, metrological, diagnostic, and organizational production supplies; printing equipment.
Educational program orientation	Educational-professional
The main focus of the educational program	The special education for development and projecting the technological processes, constructing and pre-press preparations, also production of printed and digital editions, packaging, multimedia informational product, combined products, artistic, informational and other types of products being created in publishing and printing industries; processing, registry, formation, reproduction, storing of the text, graphic, audio, video and other multimedia information; usage of software-hardware complexes in publishing and printing; producing and spreading the products of publishing and printing. Keywords: publishing and printing, technological processes, multimedia, text processing, images processing, pre-press processes, press processes, production processes, production, edition, packaging, printing materials, computer modelling, postpress and finishing processes.

Program features	Thorough fundamental education in combination with modern professional training, which allows to carry out innovative activities and work with leading institutions in the field of international economic relations, as well as the implementation of the program involves the involvement of practicing professionals, industry experts, and employer representatives in classroom classes. Industrial practice and the defense of a bachelor's qualification (diploma) thesis are provided for.
	The components list of the educational program is being approved with the list of the educational programs of the countries providing the training on the similar specialty (Institute of papermaking and printing of Lodz Polytechnics; Institute of mechanics and printing of Warsaw polytechnic; Leipzig university of the applied science, and others, those altogether with the Publishing and printing institute are being included into the International circle of the higher educational establishments preparing the specialists for publishing and printing).

4 – Graduates suitability to further employment and further study

Employment suitability	Graduates can work at enterprises of any organizational and legal form in positions (according to the classification of professions of Ukraine DK 003:2010): 3439 – specialist; 3119 – publishing and printing specialist; 3471 – graphical designer; 3471 – multimedia objects designer; 3471 – packaging designer
Further study	The study can be continued on the second (Master) level of the higher education.

5 – Teaching and evaluations

Teaching and training	The general learning style is task-oriented. Lectures, practices and seminary works, computer practices and laboratory works; course projects and works; mixed training technology, practices and excursions; diploma thesis preparation.
Evaluations	Assessment of students' knowledge is carried out in accordance with the Regulation on the system of assessment of learning outcomes at Igor Sikorsky Kyiv polytechnic institute for all types of classroom and extracurricular work (current, calendar, semester control); oral and written exams, tests

6 – Program competencies

Integral competency	Ability to resolve complex specialized tasks and practical problems in the professional activities of publishing and printing houses or in the educational process, that means usage of the theories and methods of technical, natural, humanitarian, social sciences and is characterized by the complexity and conditions uncertainties.

General Competencies (GC)

GC	1	Ability to learn and master the modern knowledge.
GC	2	Ability and understanding of the field and understanding the professional activities.
GC	3	Ability to apply knowledge to the practical situations.
GC	4	Ability to make the thoughtful decisions.
GC	5	Ability to communicate with the other professions people of different level (with the experts in the other fields of knowledge or business).
GC	6	Ability to conduct safe activities.
GC	7	Ability to work independently.

GC 8	Ability to work in team.
GC 9	Ability to realize own rights and duties as the society member, to understand the values of the people society (free democratic society) and the need of its sustainable development, law governance, rights and freedoms of the person and citizen in Ukraine.
GC 10	Ability to keep and increase the moral, cultural, scientific values and achievements of the society based on understanding the history and regularities for the object field development, its place in the general knowledge system about nature and society and in the societies development, techniques and technologies; to use the different types and forms of moving activities for the active rest and healthy lifestyle.
Professional Competencies of the specialty (PC)	
PC 1	Ability to make thoughtful decisions about the processes, related to all the production states of printed and digital editions, packaging, multimedia informational products and other product types in publishing and printing.
PC 2	Ability to apply appropriate mathematical and technical methods and computer software to solve engineering problems of publishing and printing.
PC 3	Ability to apply the principles of processing, registration, formation, reproduction, storage of text, graphic, audio and video information and features of its use for the production of printed and electronic publications, packaging, multimedia information products and other types of publishing and printing products.
PC 4	Ability to make the optimal choice of technologies, materials, equipment, hardware and software, methods and means of control for designing the technological process of production of printed and electronic publications, packaging, multimedia information products and other types of publishing and printing products.
PC 5	Ability to design the structure, construction and design of printed and electronic publications, packaging, multimedia information products and other types of publishing and printing products, using modern software and hardware, taking into account the requirements for the result, available resources and limitations.
PC 6	Ability to take into account social, environmental, ethical, economic, legal and commercial factors influencing the implementation of technical solutions in publishing and printing.
PC 7	Ability to make effective technical and economical decisions regarding the implementation of a specific project in publishing and printing activities within the publishing, production plans of the firm; development of normative and technical documentation for the production process.
PC 8	Ability to plan and organize production, operation, maintenance, distribution of products in publishing and printing, taking into account problem's specifics.
PC 9	Ability to demonstrate an understanding of metrological support, standardization, problems and areas of production quality assurance and technology.
PC 10	Ability to apply methods and means of image design and its three-dimensional modeling.

PC 11	Ability to develop a security features set, choose technologies, materials, equipment for the production of secured documents and documents with the strict accountability, as well as other printed products.
PC 12	Ability to search for new developments and experience in the operation of technological processes, materials, hardware and software and equipment in the production of publications and packaging.
PC 13	Ability to analyze the cost of time and their normalization to ensure a rational production process of editions.
7 – Program educational results	
PR 01	Apply theories and methods of mathematics, physics, chemistry, engineering, economics to solve complex problems and practical problems of publishing and printing.
PR 02	Find, evaluate and use information from various sources needed to solve theoretical and practical problems of publishing and printing.
PR 03	Rational use of raw materials, energy and other resources.
PR 04	Organize your activities to work independently and in a team.
PR 05	Apply effective forms of professional and interpersonal communication in the team to perform tasks in professional activities.
PR 06	Communicate freely on professional issues in the state and foreign languages orally and in writing.
PR 07	Understand the principles and skills of using technologies of prepress, printing and postpress processes, color theory, methods of processing text and multimedia information.
PR 08	Ensure the quality of printed and electronic publications, packaging, multimedia information products and other types of publishing and printing products.
PR 09	Process text, graphic and multimedia information using modern information technologies and specialized software.
PR 10	Evaluate the technical characteristics of printed and electronic publications, packaging, multimedia information products and other types of publishing and printing products.
PR 11	Develop the concept of the publication; composition, structure, design and apparatus of all types of publishing and printing products, working documentation to ensure the process of their creation.
PR 12	Develop, provide and implement the technological process, reasonably choosing materials, quality control systems, hardware and software, equipment, personnel and other resources.
PR 13	To control the accuracy and stability of technological processes, technical condition of equipment, quality of materials, semi-finished products, finished products with the help of modern means and methods of control.
PR 14	To design workplaces of production subdivisions of publishing and printing enterprises and to organize their operation taking into account the rules of labor protection.
PR 15	Assess production and non-production costs to ensure the production of publishing and printing products.
PR 16	Organize and ensure efficient operation of printing equipment and technical means of publishing systems.
PR 17	Apply methods and means of protection for the development of a protective set of securities and strict accounting documents, as well as other printed products.
PR 18	Apply the rules of environmental safety, safety of life, to determine the effects of publishing and printing production on the environment.
PR 19	To choose appropriate methods, means and systems of printed, electronic, multimedia, combined editions and packings for construction of rational technological process.

PR 20	Ability to apply the principles of design, three-dimensional modeling, design, design to develop the concept, design of printed and electronic publications, packaging, multimedia information products and other types of publishing and printing products.
8 – Resource support for program implementation	
Staffing	In accordance with the personnel requirements for ensuring the implementation of educational activities for the relevant level of HE, approved by the Resolution of the Cabinet of Ministers of Ukraine from 30.12.2015 y. № 1187 Practitioners from publishing and printing organizations and printers will be involved to teach individual disciplines
Logistics	In accordance with the technological requirements for material and technical support of educational activities of the relevant level of HE, approved by the Resolution of the Cabinet of Ministers of Ukraine from 30.12.2015 y. № 1187 Special hardware and software, capabilities of laboratories, which will ensure quality training at the appropriate technical level, is foreseen were used. A remote option for obtaining information and interacting with teachers is provided.
Information and educational and methodical support	In accordance with the technological requirements for material and technical support of educational activities of the relevant level of HE, approved by the Resolution of the Cabinet of Ministers of Ukraine from 30.12.2015 y. № 1187 Scientific works in the field of publishing and printing, materials on specialized portals, resources using cloud services, webinars, presentations, articles in professional publications, and use of the KPI library are used during teaching.
9 – Academic mobility	
National credit mobility	Possibility of academic mobility, double graduation
International credit mobility	Possibility of international academic mobility, double graduation, inclusive student education (Institute of Papermaking and Polygraphy of Lodz Polytechnic, Institute of Mechanics and Polygraphy of Warsaw Polytechnic, Leipzig University of Applied Sciences and others included in the International Circle with the Publishing and Printing Institute specialists of publishing and printing production), as well as other free economic zones under the program "Erasmus +" and other programs of Igor Sikorsky Kyiv polytechnic institute .
Training of foreign applicants for higher education	Studying in general groups of Ukrainian students or in separate groups with teaching of academic disciplines in English with learning Ukrainian as a foreign language.

2. EDUCATIONAL PROGRAM COMPONENTS LIST

Code	Components of the educational program (academic disciplines, practices, qualification work)	Credits number	Final control form
1	2	3	4
1. NORMATIVE educational components			
1.1. General training cycle			
GT 1	Principles of oral professional speech (rhetorics)	2,0	Final test
GT 2	Ukraine in the context of the historical development of Europe	2,0	Final test
GT 3	Basics of a healthy lifestyle	3,0	Final test
GT 4.1	Practical foreign language course. Part 1	3,0	Final test
GT 4.2	Practical foreign language course. Part 2	3,0	Final test
GT 5	Economics and production organization	4,0	Final test
GT 6	Labor protection and civil protection	4,0	Final test
GT 7	Introduction to philosophy	2,0	Final test
GT 8	I have the right	2,0	Final test
GT 9.1	Practical course of a foreign language of professional direction. Part 1	3,0	Final test
GT 9.2	Practical course of a foreign language of professional direction. Part 2	3,0	Exam
GT 10.1	Higher mathematics. Part 1. Linear, vector algebra and analytic geometry. Differential calculus	5,0	Exam
GT 10.2	Higher mathematics. Part 2. Functions of many variables. Integral calculus. Differential equations	4,0	Exam
GT 10.3	Higher mathematics. Part 3. Field theory. Number series	3,5	Final test
GT 10.4	Higher mathematics. Part 4. Functional series. Elements of probability theory	2,0	Final test
GT 11.1	Physics. Part 1. Mechanics and molecular physics	5,0	Final test
GT 11.2	Physics. Part 2. Electricity and magnetism. Optics	3,0	Final test
GT 12.1	Physico-chemical bases of printing production. Part 1. Inorganic and organic chemistry	4,0	Final test
GT 12.2	Physico-chemical bases of printing production. Part 2. Basics of physical and chemical transformations in production processes	4,5	Exam
GT 13	Engineering graphics	3,0	Final test
GT 14	Applied computer graphics	4,0	Final test
GT 15	Theoretical and applied mechanics	3,0	Final test
GT 16	Fundamentals of electrical engineering and electronics	3,0	Final test
GT 17	Color theory	4,0	Exam
1.2. Professional training cycle			
PT 1	Introduction to the specialty	4,0	Exam
PT 2	Informatization of publishing and printing production	4,0	Final test
PT 3.1	Materials of publishing and printing. Part 1. General materials science	3,5	Exam
PT 3.2	Materials of publishing and printing. Part 2. Publishing and printing materials	3,0	Final test
PT 4.1	Information processing technologies. Part 1. Text	3,0	Final test

	information processing technologies		
PT 4.2	Information processing technologies. Part 2. Graphical information processing technologies	4,5	Exam
PT 5.1	Publishing and printing technologies. Part 1. Editorial and publishing processes	3,5	Final test
PT 5.2	Publishing and printing technologies. Part 2. Prepress processes	4,5	Exam
PT 5.3	Publishing and printing technologies. Part 3. Printing processes	3,0	Final test
PT 5.4	Publishing and printing technologies. Part 4. Post-press processes	4,5	Exam
PT 5.5	Publishing and printing technologies. Part 5. Label and packaging manufacturing technologies	4,0	Exam
PT 5.6	Publishing and printing technologies. Part 6. Special types of printing	3,5	Final test
PT 6.1	Equipment in publishing and printing. Part 1. Publishing and printing equipment production	3,0	Final test
PT 6.2	Equipment in publishing and printing. Part 2. Technological processes of mechanical processing of parts printing equipment	2,0	Final test
PT 7.1	Construction of editions. Part 1. Editions and packaging design	3,5	Final test
PT 7.2	Construction of editions. Part 2. Architecture of electronic editions	2,0	Final test
PT 8.1	Digital editions technologies. Part 1. Web design	2,0	Final test
PT 8.2	Digital editions technologies. Part 2. Technologies for creating electronic publications	2,0	Final test
PT 8.3	Digital editions technologies. Part 3. Technologies for preparing multimedia content	5,0	Exam
PT 9.1	Design of publishing and printing production. Part 1. Design of technological processes	5,5	Exam
PT 9.2	Design of publishing and printing production. Part 2. Design of production processes	3,5	Exam
PT 10	Printed products security technologies	4,0	Exam
PT 11	Quality management, metrology, standardization and certification in publishing and printing	4,5	Exam
PT 12	Information processing technologies. Course work	1,0	Final test
PT 13	Publishing and printing technologies. Course work	1,0	Final test
PT 14	Design of publishing and printing production. Course work	1,0	Final test
PT 15	Manufacturing practices	4,0	Final test
PT 16	Pre-diploma practice	6,0	Final test
PT 17	Diploma project	6,0	Defence
2. SELECTABLE educational components			
2.1. General training cycle			
GS 1	Educational component 1 GU catalogue	2,0	Final test
GS 2	Educational component 2 GT catalogue	2,0	Final test
2.2. Professional training cycle			
PS 1	Educational component 1 F-Catalogue	4,0	Final test

PS 2	Educational component 2 F-Catalogue	4,0	Final test
PS 3	Educational component 3 F-Catalogue	4,0	Final test
PS 4	Educational component 4 F-Catalogue	4,0	Final test
PS 5	Educational component 5 F-Catalogue	4,0	Final test
PS 6	Educational component 6 F-Catalogue	4,0	Final test
PS 7	Educational component 7 F-Catalogue	4,0	Final test
PS 8	Educational component 8 F-Catalogue	4,0	Final test
PS 9	Educational component 9 F-Catalogue	4,0	Final test
PS 10	Educational component 10 F-Catalogue	4,0	Final test
PS 11	Educational component 11 F-Catalogue	4,0	Final test
PS 12	Educational component 12 F-Catalogue	4,0	Final test
PS 13	Educational component 13 F-Catalogue	4,0	Final test
PS 14	Educational component 14 F-Catalogue	4,0	Final test
Total size of the mandatory components		**180**	
Total size of the sample components		**60**	
Total size of the educational components that ensure the acquisition of competencies defined by the SHE		**180**	
TOTAL SIZE OF THE EDUCATIONAL PROGRAM		**240**	

3. STRUCTURE-LOGICAL SCHEME OF THE EDUCATIONAL PROGRAM
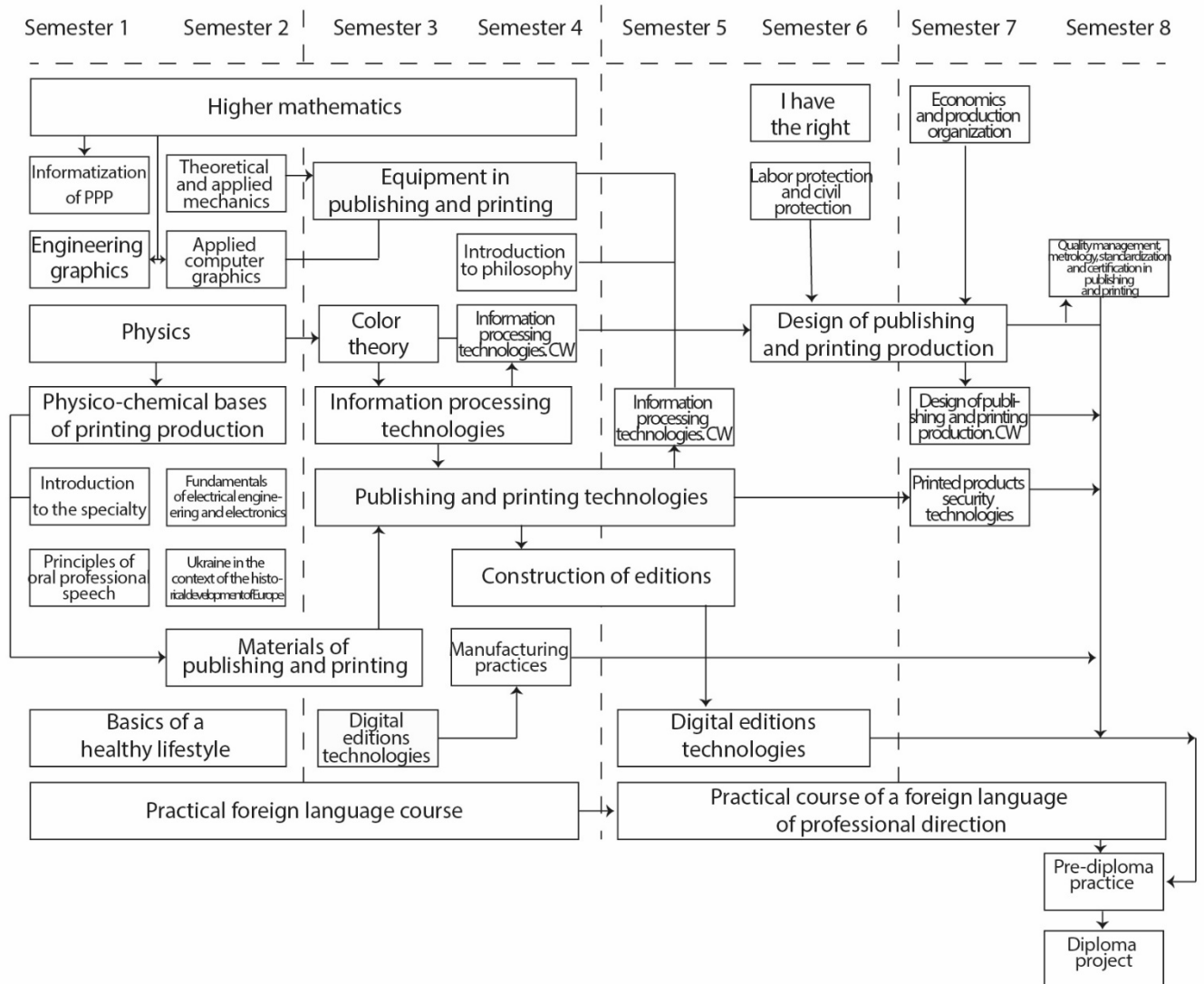
4. FORM OF GRADUATE CERTIFICATION OF HIGHER EDUCATION APPLICANTS

Graduation certification of applicants for higher education under the educational-professional program "Printed and digital editions technologies" specialty 186 Publishing and printing is carried out in the form of defense of qualification work - diploma thesis, and ends with issuing the standardized document type stating reaching the Bachelor's degree in publishing and printing, according to the educational-professional program "Printed and digital editions technologies". Graduation certification is open and public. The attestation ends with the issuance to the recipient of a document of the prescribed format awarding him a bachelor's degree with the qualification: bachelor's degree in publishing and printing, under the educational and professional program "Technologies of printed and electronic editions".

5. CORRESPONDENCE MATRIX OF RELATIONS BETWEEN PROGRAM COMPETENCIES AND EDUCATIONAL PROGRAM COMPONENTS

	GT 1	GT 2	GT 3	GT 4	GT 5	GT 6	GT 7	GT 8	GT 9	GT 10	GT 11	GT 12	GT 13	GT 14	GT 15	GT 16	GT 17	PT 1	PT 2	PT 3	PT 4	PT 5	PT 6	PT 7	PT 8	PT 9	PT 10	PT 11	PT 12	PT 13	PT 14	PT 15	PT 16	PT 17
GC 1	+	+		+			+		+	+	+	+		+						+	+	+			+	+	+		+	+	+			+
GC 2			+	+	+				+			+	+	+					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
GC 3	+			+		+		+	+	+	+	+		+						+	+		+							+	+	+	+	+
GC 4	+			+	+	+	+	+	+											+								+		+	+	+	+	+
GC 5	+			+					+																									
GC 6			+			+										+										+								+
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GC 9		+				+		+																										+
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PC 1																		+			+		+	+	+	+				+	+	+	+	+
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PC 12																										+	+		+	+	+			+
PC 13					+																					+				+	+		+	+

6. MATRIX CORRELATING THE PROGRAMMED EDUCATIONAL RESULTS TO THE RESPECTFUL EDUCATIONAL PROGRAM COMPONENTS

	GT 1	GT 2	GT 3	GT 4	GT 5	GT 6	GT 7	GT 8	GT 9	GT 10	GT 11	GT 12	GT 13	GT 14	GT 15	GT 16	GT 17	PT 1	PT 2	PT 3	PT 4	PT 5	PT 6	PT 7	PT 8	PT 9	PT 10	PT 11	PT 12	PT 13	PT 14	PT 15	PT 16	PT 17
PR01					+					+	+	+	+	+		+	+		+		+	+			+	+	+	+	+	+	+			+
PR02					+													+		+	+	+	+		+	+			+	+	+	+		+
PR03					+											+				+		+	+		+	+				+	+	+		+
PR04	+	+	+	+			+	+		+	+	+	+	+								+				+					+	+	+	+
PR05	+						+		+									+								+						+	+	
PR06	+			+					+																								+	+
PR07						+												+			+	+				+			+	+		+		+
PR08																						+			+	+	+	+	+	+	+			
PR09																			+		+	+		+	+				+			+		+
PR10																						+			+	+	+		+	+	+	+	+	+
PR11																						+		+	+									+
PR12																			+			+			+	+			+	+				+
PR13						+														+		+	+		+	+		+	+	+			+	+
PR14						+																				+				+				+
PR15					+																					+				+				+
PR16						+									+								+											
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PR18			+			+																									+			
PR19																		+				+		+	+	+	+			+	+		+	
PR20																		+			+			+	+	+			+		+			