MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
NATIONAL TECHNICAL UNIVERSITY OF UKRAINE
"IGOR SIKORSKY KYIV POLYTECHNIC INSTITUTE"

Publishing and Printing

EDUCATIONAL AND SCIENTIFIC PROGRAM
third (Doctor of Philosophy's)
level of higher education

Specialty	**186 Publishing and printing**
Fields of knowledge	**18 Production and technologies**
Qualification	**Doctor of Philosophy in Publishing and Printing**

Kyiv – 2022

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", Institute for Publishing and Printing
Higher education degree and the name of the qualification	Degree – Doctor of Philosophy Qualification – Doctor of Philosophy in publishing and printing
Official name of the educational program	Publishing and Printing
Diploma type and educational program size	Diploma of Doctor of Philosophy, educational component – 60 ECTS credits, study period 4 years the scientific component involves conducting one's own scientific research and presenting its results as a dissertation
Accreditations availability	The program is accredited by the National Agency for Quality Assurance of Higher Education on May, 17, 2022. The certificate is valid until May, 16, 2027.
National qualification frame level	Ukrainian national qualification frame level – level 9 QF-EHEA – thirdcycle EQF-LLL – level 8
Requirements for the level of education of persons who can start studying under educational program	Master degree
Teaching languages	Ukrainian
Educational program viability term	Until the next review, but not longer than 05/16/2027.
Web-address of the permanent educational program's location	https://osvita.kpi.ua/sites/default/files/opfiles/186_ONPD_VP_2022o.pdf http://vpi.kpi.ua/
2 – Educational program goal	
The goal of the educational program is to train highly qualified (perfect) specialists integrated into the European and global scientific and educational space, capable of creating modern scientific knowledge and innovative technologies for the benefit of humanity and ensuring a worthy place for Ukraine in the world community, capable of independent scientific research, scientific-organizational, pedagogical-organizational and practical activities in the publishing and printing industry and teaching work in institutions of higher education, capable of the highest achievements in the educational and scientific environment, which corresponds to the development strategy of KPI named after Igor Sikorsky.	

3 – Educational program characteristics	
Description of the subject area	*Objects of study and activity:* products and technologies of publishing and printing, their research, improvement, creation, manufacture, distribution, exploitation, and restoration. *Learning goals:* acquiring the ability to solve complex problems of professional and/or research and innovation activities in the field of publishing and printing, which involves a deep rethinking of existing and creating new integral knowledge and/or professional practice. *The theoretical content of the subject area:* concepts, concepts, principles: publishing processing of various types of information; development and implementation of technological processes and their components; design and organization of production; creation and improvement of products and technologies of publishing and printing. *Methods, means, and technologies:* methods of design, manufacture, testing, control of products and technological processes of publishing and printing; methods of calculation, simulation, design, and implementation of technological processes, methods of data analysis. *Tools and equipment:* hardware and software complexes, equipment for control, design, and simulation of technological processes and publishing and printing products; means of technological, informational, instrumental, metrological, diagnostic, material, and organizational support of production.
Educational program orientation	Educational and scientific
The main focus of the educational program	Special education for the development of scientific and methodological foundations of design, creation, research, and improvement of printed, electronic, multimedia, and combined editions, packaging, publishing systems, instrumental and technical means, technological processes, materials, and technical and technological support for development, preparation for production and production publishing and printing products. *Keywords:* publishing, printing, technological processes, multimedia, technological support of production, edition, packaging, printing materials, simulation, research
Program features	A special feature of the educational program is the combination of in-depth fundamental general scientific and professionally oriented training of applicants with scientific interdisciplinary research in innovative areas of publishing and printing technologies. The training of the competitive professionals of the highest level in publishing and printing is carried out with the involvement of the scientific and pedagogical potential of the world-class engineering scientific school of the Educational and Scientific Institute for Publishing and Printing of KPI named after Igor Sikorsky.

4 – Graduates' ability to further employment and study	
Employment of graduates	Professional activities of scientific and scientific-pedagogical workers in scientific institutions and institutions of higher education, research, project and design institutions and divisions of enterprises. 2149.1 – researcher (engineering); 2149.1 – technologist-researcher (publishing and printing production), 1222.1 – main specialists – managers and technical managers of production divisions in the industry; 1237.2 – head of the laboratory (research, production preparation); 2310.2 – teacher of a higher education institution
Academic rights of graduates	Obtaining a Doctor of Science degree and additional qualifications in the adult education system. Continuing education in doctoral of science studies and/or participation in postdoctoral programs
5 – Teaching and evaluations	
Teaching and training	Problem-oriented learning. Lectures, practical, seminar classes, computer workshops, and practices with the use of information and communication technologies on separate educational components of the doctoral dissertation. Conducting own scientific research using laboratories and equipment; approbation of results at scientific and practical conferences, and seminars; reporting of graduate students twice a year.
Evaluations	The rating system, oral and written exams, testing, etc.
6 – List of graduate competencies	
Integral competence	IC. The ability to produce new ideas, to solve complex problems of professional and/or research and innovation activities in the field of publishing and printing, to apply the methodology of the scientific and pedagogical activity, as well as to conduct own scientific research, the results of which have scientific novelty, theoretical and practical significance.
General competences (GC)	
GC 1.	Ability to work in an international context.
GC 2.	Ability to develop and manage projects.
GC 3	Ability to solve complex problems in the field of publishing and printing on the basis of a systematic scientific worldview and a general cultural outlook while observing the principles of professional ethics and academic integrity.
GC 4	Ability to abstract thinking, analysis, and synthesis new and complex ideas
Special (professional, subject) competences (SC)	
SC 1	Ability to plan and carry out original research, to achieve scientific results that create new knowledge in the field of publishing and printing and related interdisciplinary areas.
SC 2	Ability to integrate knowledge from different fields, apply a systematic approach and consider non-technical aspects when solving complex publishing and printing problems during research.

SC 3	Ability to identify, set and solve problems of a research nature in the field of publishing and printing; evaluate and ensure the quality of performed research
SC 4	Ability to apply modern digital technologies, databases, and other electronic resources, specialized software, and appropriate mathematical, scientific, and technical methods in scientific and educational activities.
SC 5	Ability to initiate, develop and implement research and innovation projects in the field of publishing and printing, to plan and organize the work of research teams.
SC 6	Ability to carry out and organize scientific and pedagogical activities in institutions of higher and professional pre-higher education.
SC 7	Ability to develop new and improve existing technological processes and types of products in the field of publishing and printing, publishing systems, and hardware and software for publishing and printing production.
SC 8	Ability to develop the scientific and methodological foundations of design, creation, research, and implementation in the production of new technologies, equipment, printed, multimedia, cross-media, and combined editions, packaging, materials, and technological support of publishing and printing.
SC 9	Ability to communicate with a wide European and global academic community and use modern methods and technologies of scientific communication in national and foreign languages
SC 10	Ability to present the results of scientific research and publish them in the state, English, and/or other foreign languages
7 – The normative content of the training of higher education applicants, formulated in terms of learning outcomes	
LO 1	Have advanced conceptual and methodological knowledge in the field of publishing and printing and at the boundaries of subject areas, as well as research skills sufficient to conduct scientific and applied research at the level of the latest world achievements, obtain new knowledge, and/or implement innovations.
LO 2	Know existing, identify new, identify promising scientific and practical problems of publishing and printing, determine and take into account their interdisciplinary and global contexts, determine methods and means of solving the specified problems, analyse and evaluate the state and prospects of the development of technologies in the field of publishing and printing.
LO 3	Formulate and test hypotheses; use appropriate evidence to substantiate conclusions, in particular, the results of theoretical analysis, experimental studies and mathematical and/or computer simulating, and available scientific and technical information.
LO 4	Plan and carry out experimental and/or theoretical research on publishing and printing and related interdisciplinary areas using modern tools and technologies for searching, processing, and analysing information and observing the norms of academic and professional ethics, critically analyse the results of own research and the results of other researchers in the context the entire complex of modern knowledge regarding the researched problem, the state, and prospects of the development of technologies in the field of publishing and printing.

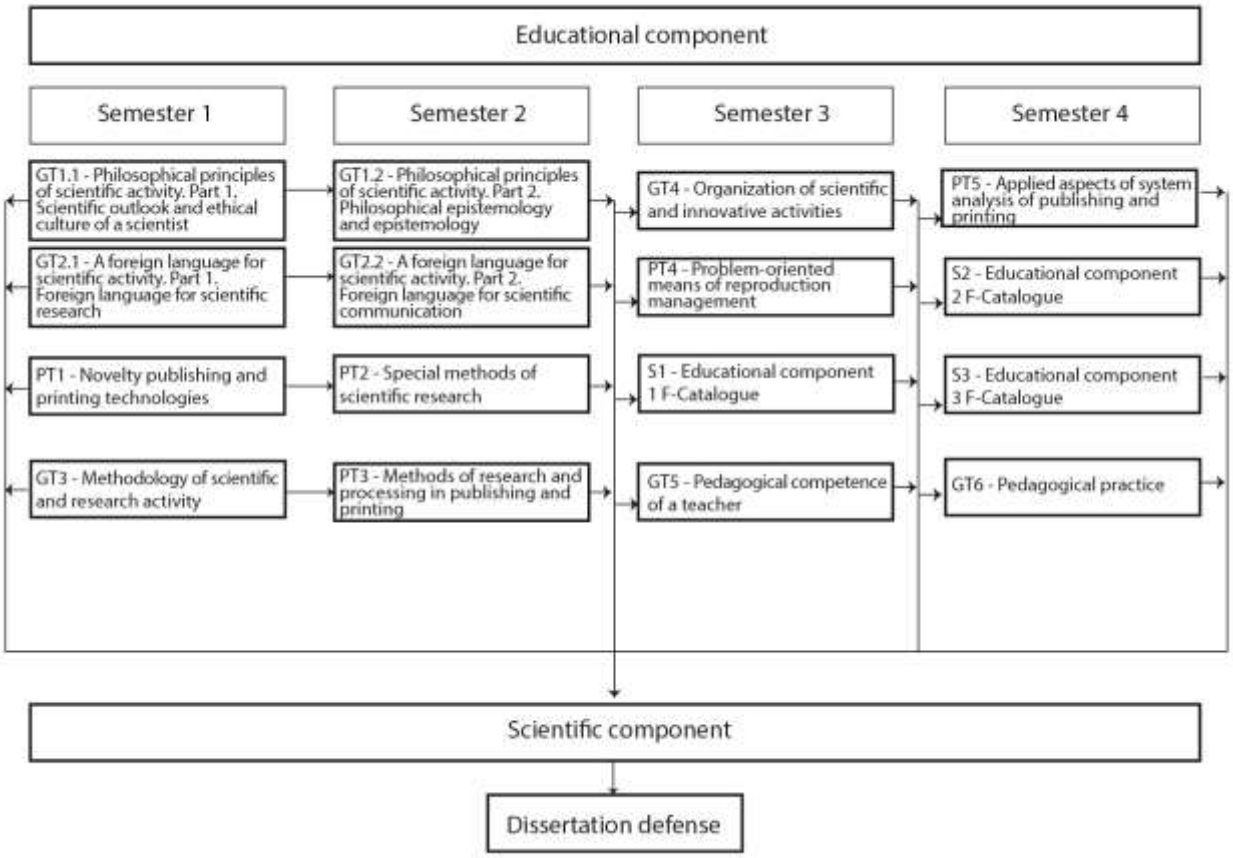
LO 5	Freely present and discuss with specialists and non-specialists the results of research, scientific and applied problems of publishing and printing in national and foreign languages, and publicize the results of research in scientific publications in leading international scientific publications.
LO 6	Develop, research, and improve conceptual, mathematical, and computer models of processes and systems, effectively use them to obtain new knowledge, and/or create innovative products in the field of publishing and printing, and other areas.
LO 7	To develop and implement scientific and/or innovative engineering projects that make it possible to rethink existing and create new holistic knowledge and/or professional practice and to solve significant scientific and technological problems of publishing and printing, taking into account social, economic, environmental and legal aspects
LO 8	To organize and carry out the educational process in the field of publishing and printing, its scientific, educational-methodical, and regulatory support, to develop and teach special educational disciplines in institutions of higher education.
LO 9	Formulate and express the results of one's own research, and present research results in the form of scientific reports, articles, reviews, etc. for their wide approbation in national and international professional information resources in the state, English, and/or other foreign languages, in compliance with the principles of academic integrity.
LO 10	Apply the principles, methods, tools, and technologies of the system-structural approach, multi-factor, and multi-parameter theoretical and empirical studies. Create mathematical models and realize verification of simulation results, optimization methods, basic algorithms for simulation products and technological processes, and optimal decision-making. Effectively use all mentioned means to obtain new knowledge and/or creation of innovative products and technologies in publishing and printing and related interdisciplinary areas. Carry out system actions during the implementation of scientific research and creativity.
LO 11	Gain modern methods of pedagogical activity in higher education. Teach professionally oriented disciplines of the ground of on system, methodological knowledge of publishing and printing, and related fields. Introduce the results of scientific research into the educational process.
LO 12	Know and understand the structure and functions of the general scientific philosophical concept of the scientific worldview, the role of science, its influence on social processes, and the development of modern civilization
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
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

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 University Scientific and Technical Library
9 – Academic mobility	
National credit mobility	Possibility of academic mobility, double graduation
International credit mobility	On the basis of bilateral agreements between the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" and foreign partner educational institutions, the possibility of concluding agreements on international academic mobility
Training of foreign applicants for higher education	Can be realized in Ukrainian or English, provided that the language level of applicants is not lower than B2

2. CURRICULUM
(EDUCATIONAL PROGRAM COMPONENTS LIST)

Code	Components of the educational program (academic disciplines, practices, qualification work)	ECTS credits number	Final control form
1	2	3	4
1. NORMATIVE educational components			
1.1. Educational disciplines for gaining general scientific (philosophical) competencies			
GT 1.1	Philosophical principles of scientific activity. Part 1. Scientific outlook and ethical culture of a scientist	2	Final test
GT 1.2	Philosophical principles of scientific activity. Part 2. Philosophical epistemology and epistemology	4	Exam
1.2. Educational disciplines for gaining language competences			
GT 2.1	A foreign language for scientific activity. Part 1. Foreign language for scientific research	3	Final test
GT 2.2	A foreign language for scientific activity. Part 2. Foreign language for scientific communication	3	Exam
1.3. Educational disciplines for the gaining of universal competencies of a scientific and scientific-pedagogical staff			
GT 3	Methodology of scientific and research activity	4	Exam
GT 4	Organization of scientific and innovative activities	4	Final test
GT 5	Pedagogical competence of a teacher	2	Final test
GT 6	Pedagogical practice	3	Final test
1.4. Educational components for gaining a perfect knowledge of the specialty			
PT 1	Novelty publishing and printing technologies	4	Exam
PT 2	Special methods of scientific research	4	Final test
PT 3	Methods of research and processing in publishing and printing	4	Final test
PT 4	Problem-oriented means of reproduction management	4	Exam
PT 5	Applied aspects of system analysis of publishing and printing	4	Exam
2. SELECTABLE educational components			
S 1	Educational component 1 F-Catalogue	5	Final test
S 2	Educational component 2 F-Catalogue	5	Final test
S 3	Educational component 3 F-Catalogue	5	Final test
Total amount of the normative components		**45 (75 %)**	
Total amount of the selectable components		**15 (25 %)**	
Total amount of educational program		**60**	

3. STRUCTURE-LOGICAL SCHEME OF THE EDUCATIONAL PROGRAM



4. SCIENTIFIC COMPONENT

Year of training	Content of the graduate students research work	Control form
1	Choosing a topic for a graduate student's dissertation, forming an individual work plan for a graduate student; executing a dissertation work under the supervision of a scientific supervisor; preparing and submitting for publication at least 1 article on the research topic in accordance with current requirements, participation in scientific and practical conferences (seminars) with the publication of report abstracts.	Approval by the academic council of the institute/faculty, reporting on the stage of implementation of the graduate student's individual plan twice a year
2	The work on theme according to dissertation work under the supervision of a scientific supervisor; preparation and submission for publication of at least 1 article on the research topic in accordance with current requirements, participation in scientific and practical conferences (seminars) with the publication of abstracts and proceedings.	Reporting on the stage of implementation of the graduate student's individual plan twice a year
3	The work on theme according to dissertation work under the supervision of a scientific supervisor; preparation and submission for publication of at least 1 article on the research topic in accordance with current requirements, participation in scientific and practical conferences (seminars) with the publication of abstracts and proceedings.	Reporting on the stage of implementation of the graduate student's individual plan twice a year
4	Forming the graduate student's scientific achievements as a dissertation, summarizing the completeness of the coverage of the dissertation results in scientific articles in accordance with current requirements. Implementation of the obtained results and obtaining confirmation documents. Application of documents for the preliminary examination of the qualification work (dissertation). Preparation of a scientific report for attestation (dissertation defense).	Reporting on the stage of implementation of the graduate student's individual plan twice a year Providing a conclusion on the scientific novelty, the theoretical and practical significance of the results of the dissertation

5. FORM OF GRADUATE CERTIFICATION OF HIGHER EDUCATION APPLICANTS

Attestation of candidates for the educational level of Doctor of Philosophy on this educational program is carried out in the form of a public defence of the dissertation.

Based on the results of a public defense of the dissertation a document of the established type is issued on awarding the degree of Doctor of Philosophy with the qualification: Doctor of Philosophy in Publishing and Printing.

The dissertation for obtaining the degree of Doctor of Philosophy is an independent comprehensive study that offers a solution to a complex problem in the field of publishing and printing or on its border with other specialties, the results of which have scientific novelty, theoretical and practical significance.

The dissertation should not contain academic plagiarism, falsification, or fabrication.

The qualification (dissertation) work is checked for plagiarism, published on the official website of KPI named after Igor Sikorsky, and after the defense is placed in the NTL repository of KPI named after Igor Sikorsky for free access.

Publication of qualification works containing information with restricted access should be carried out in accordance with the requirements of the law.

Attestation is carried out openly and publicly.

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

	GT 1	GT 2	GT 3	GT 4	GT 5	GT 6	PT 1	PT 2	PT 3	PT 4	PT 5	Scientific component
GC 1		+		+			+					+
GC 2				+						+		+
GC 3	+		+	+	+	+	+		+	+	+	+
GC 4	+		+					+		+	+	+
PC 1			+					+	+			+
PC 2	+		+				+		+	+	+	+
PC 3			+				+		+		+	+
PC 4					+	+		+	+	+		+
PC 5				+						+		+
PC 6					+	+				+		+
PC 7							+		+	+		+
PC 8			+	+			+	+	+	+	+	+
PC 9		+	+		+	+					+	+
PC 10		+	+		+	+					+	+

7. MATRIX CORRELATING THE PROGRAM EDUCATIONAL LEARNING OUTCOMES TO THE RESPECTFUL EDUCATIONAL PROGRAM COMPONENTS

	GT 1	GT 2	GT 3	GT 4	GT 5	GT 6	PT 1	PT 2	PT 3	PT 4	PT 5	Scientific component
LO 1		+	+	+			+		+	+	+	+
LO 2		+	+									+
LO 3			+					+	+	+	+	+
LO 4	+		+						+	+	+	+
LO 5	+	+	+								+	+
LO 6	+		+	+				+		+	+	+
LO 7	+			+			+				+	+
LO 8	+	+			+	+						+
LO 9	+	+	+								+	+
LO 10			+					+		+	+	+
LO 11			+		+	+	+		+	+	+	+
LO 12	+		+					+		+	+	+