MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

KYIV NATIONAL UNIVERSITY OF TECHNOLOGIES AND DESIGN

# SCIENTIFIC STUDY PROGRAM

CONSUMER INDUSTRY TECHNOLOGIES

Level of higher education third (educational and scientific)

Degree of higher education Doctor of Philosophy .

Knowledge area 18 Manufacturing and technology

Specialty 182 Consumer industry technologies

Qualification Doctor of Philosophy in Consumer industry technologies

Kyiv 2021

**1. Profile of the educational and scientific program** Consumer industry technologies

| 1 - General information | |
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| Full name of the institution of higher education and structural unit | Kyiv National University of Technologies and Design<br>Department of Textile Technology and Design<br>Department of Technology and Design of Sewing Products<br>Department of Design and Technology of Leather Products<br>Department of Ergonomics and Design<br>Department of Biotechnology, Leather and Fur |
| Higher education level and qualifications in the original language | Level of higher education - third (educational and scientific)<br>Degree of higher education – Doctor of Philosophy<br>Knowledge Area - 18 Manufacturing and Technology<br>Specialty - 182 Consumer industry technologies |
| Type of diploma and scope of the educational program | Doctor of Philosophy, single, 48 ECTS credits. |
| Accreditation | - |
| Cycle / level | National qualifications framework of Ukraine - eighth level |
| Prerequisites | Master's degree or educational qualification level of a specialist |
| Language (s) of instruction | Ukrainian |
| Duration of the educational program | - |
| Internet address of the permanent posting of the description of the educational program | http://knutd.edu.ua/ekts/ |
| **2 - The purpose of the educational program** | |
| Deepening of the theoretical general university and professional training, development of general and professional competencies, which provides training of highly qualified personnel for the implementation of research and design and analytical activities, scientifically based consulting in consumer industry technologies, and teaching.<br>The program was developed by the mission of the university, aimed at obtaining competencies sufficient to develop new ideas, solving complex problems of research and project activities, mastering the methodology of scientific and pedagogical activities, as well as conducting their own scientific research in the field of production and consumer industry technologies, the results of which must have scientific novelty, theoretical and practical significance. | |
| **3 - Characteristics of the educational program** | |
| **Subject area** | The program is designed as an optimal combination of academic and professional requirements. It is focused on the formation of applicants' competencies for acquiring in-depth knowledge in their specialty, mastering general scientific (philosophical) competencies, acquiring universal research skills, and presenting their own research results in oral and written form, in particular, in a foreign language.<br>Compulsory disciplines - 75%, of which - compulsory disciplines of vocational training - 44%, general training - 34%, knowledge of a foreign language - 22%; disciplines of free choice of the applicant, providing professional training - 25% are selected from the university-wide directory in accordance with the approved procedure at the University. |
| **Program orientation** | The educational and scientific program for the preparation of a Ph.D. |

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| **The main focus of the program** | General program: Consumer industry technologies.<br>The emphasis is on the formation and development of design and professional competencies in the field of manufacturing technologies and design of textile materials, footwear, sewing, knitwear, leather haberdashery, and fur products, aimed at gaining the ability to master the methods and techniques of theoretical and practical work. |
| **Study program features** | The program is based on innovative project results and modern scientific research in the field of production and consumer industry technologies takes into account the specifics of technological processes of light industry enterprises of different profiles and capacities, scientific institutions, focuses on current specializations, within which the applicant determines a professional and scientific career.<br>The program develops the prospects for participation and internship in the structure of research and design organizations both in Ukraine and abroad. It is carried out in an active research environment, focused on the implementation of the program of international academic mobility of participants in the educational process. |
| **4 – Graduate's suitability for employment and further study** | |
| **The employment suitability** | Obtaining the educational degree of Doctor of Philosophy broadens the prospects for a professional career in consumer industry technologies. Applicants are able to work in institutions, institutions of higher education, companies, research and design institutions, research and production associations, institutions of a technical profile, small businesses.<br>Specialists are able to perform the professional work of an assistant to the department of a higher education institution, a researcher, a research engineer, an analyst-consultant to the head of a structural unit, a chief engineer, an expert on quality assurance and determination, an artist-fashion designer, a designer in the field of textile production, consumer industry technologies, industry fashion, and industrial design. |
| **Further studying** | Lifelong learning to improve professional, scientific, and other activities. The possibility of continuing education at the scientific level of higher education (Doctor of Science). |
| **5 – Teaching and grading** | |
| **Teaching and Learning** | Student-centered and problem-oriented teaching is used, teaching through scientific and pedagogical practice and self-study. The system of teaching methods is based on the principles of purposefulness, binarity - the active direct participation of a scientific and pedagogical worker and an applicant for higher education.<br>Forms of organizing the educational process: lecture, seminar, practical, laboratory lesson, practical training, independent work, consultations, development of professional projects (works). |
| **Grading** | Exams, testing, essays, design work, presentations, reports, portfolios, design analytical tasks. |
| **6 - Program competencies** | |
| **Integral Competence (IC)** | The ability to produce new ideas, solve complex problems of production and consumer industry technologies in the field of professional and/or experimental and innovative activities, apply the methodology of scientific and pedagogical activities, as well as to conduct their own scientific research, the results of which should have scientific novelty, theoretical and practical significance. |

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| **General competencies (GC)** | GC 1 | Ability for abstract thinking, analysis, and synthesis. |
| | GC 2 | Ability to design and manage projects. |
| | GC 3 | Ability to generate new ideas (creativity). |
| | GC 4 | Formation of a systemic scientific/artistic worldview, professional ethics, and general cultural outlook. |
| | GC 5 | Ability to communicate in a foreign language. |
| | GC 6 | Ability to use information and communication technologies. |
| | GC 7 | Ability to work in an international context. |
| **Professional competencies (PC)** | PC 1 | Ability to carry out scientific and pedagogical activities. |
| | PC 2 | Ability to plan and solve problems of one's own professional and personal development. |
| | PC 3 | Ability to initiate and carry out scientific and design research of production products and consumer industry technologies on the basis of a holistic systemic scientific worldview. |
| | PC 4 | Ability for analytical and experimental scientific and technical activities using effective methods and research tools in technologies for obtaining products of light industry production. |
| | PC 5 | The ability to organize and conduct a system-structural analysis of the research results, drawing up practical recommendations for the design of light industry products with predictable characteristics. |
| | PC 6 | The ability to navigate in the selection of a mathematical apparatus for modelling technological production processes and making optimal decisions. |
| | PC 7 | Ability to make informed decisions. |
| | PC 8 | Ability to communicate effectively with dedicated professional and general audiences. |

| **7 - Programmatic learning outcomes** | |
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| **Knowledge and understanding:** | |
| PLO 1 | Know the structure and functions of modern scientific knowledge and the trends of its historical development; global trends in the scientific picture of the world; ideological, methodological, and other philosophical foundations of modern scientific knowledge, problems associated with the influence of science and technology on the development of modern civilization. |
| PLO 2 | Know the principles of the systemic-structural approach to the design of light industry products with improved ergonomic and aesthetic properties. |
| **Application of knowledge and understanding (skill):** | |
| PLO 3 | Demonstrate versatile research skills, such as oral and written presentation of the results of their own research, management of research projects, and/or writing proposals for research funding. |
| PLO 4 | To develop the structure and content of the lesson in accordance with the didactic goal, plan the independent work of students and apply the main systems for diagnosing and assessing the results of educational activities, strategies of pedagogical interaction. |
| PLO 5 | Use various strategies of pedagogical interaction, methods of communicative influence, dialogical pedagogical communication, as well as demonstrate leadership and self-regulation skills based on self-knowledge. |
| PLO 6 | Choose methods and technologies for constructing mathematical models and verifying the results of modelling, methods of optimization and multicriteria optimization, basic algorithms for modelling technological processes, and making optimal decisions. |
| PLO 7 | Use modern standard computer programs and develop our own to solve problems of modelling, forecasting, and interpretation of the results. |

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| PLO 8 | Demonstrate the ability to communicate interactively with the wider scientific community and the public in a particular field of scientific and/or professional activity, present, discuss and defend their views orally and in writing in front of a professional and non-professional audience. |
| **Forming reasoning:** | |
| PLO 9 | Find information and discuss in a foreign language when solving social and professional problems; be able to translate, abstract, and annotate technical texts. |
| PLO 10 | Perform patent search, investigate and correctly form signs of novelty in objects that are being developed, file applications for inventions and works of authorship, competently analyze technical and economic solutions in order to determine their patentability and patent purity. |
| PLO 11 | Develop models of technological processes and systems, master the basic technologies for the computer implementation of these models and methods of their effective application in scientific and design activities. |
| PLO 12 | Use modern information technologies for research search, modelling production processes and making optimal decisions, formalizing research results, automating experiments, statistical data processing. |
| PLO 13 | Skilfully reflect the results of scientific research in scientific articles published both in professional domestic publications and in publications included in international scientometric databases. |
| PLO 14 | Demonstrate the ability to take responsibility for the results of their professional activities, observe professional ethics and corporate culture. |

| **8 – Resources for program implementation** | |
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| **Staffing** | All scientific and pedagogical workers who provide an educational and professional program for qualifications corresponding to the profile and direction of disciplines; have the necessary teaching experience and practical experience. In the process of organizing training, professionals with experience in research/management / innovative/creative work and/or work in their specialty and foreign lecturers are involved. |
| **Logistics** | The material and technical support allow you to fully ensure the educational process throughout the entire training cycle for the educational program. The condition of the premises is certified by sanitary-technical passports, in accordance with the current regulations. |
| **Information and methodical support** | The program is fully provided with an educational and methodological complex of all components of the educational program, the presence of which is presented in the modular environment of the educational process of the University. |
| **9 - Academic mobility** | |
| **National credit mobility** | Provides for the possibility of academic mobility in some components of the educational program, ensuring the acquisition of general and/or professional competencies. |
| **International credit mobility** | The program develops the prospects for participation and internship in research projects and academic mobility programs abroad. Runs in an active research environment. |
| **Training of foreign applicants for higher education** | Training of foreign applicants for higher education is carried out according to accredited educational programs. |

## 2. List of components of the educational and scientific program of the third (educational and scientific) level of higher education

### 2.1.1 List of components of the educational scientific program

| Code | Components of the educational program (disciplines, semester work, practice) | Amount of credits | Final control form |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| **Compulsory EP components (CC)** | | | |
| **General courses cycle** | | | |
| CC 1 | Philosophy of Science and Research Methodology | 4 | exam |
| CC 2 | Foreign language for academic purposes | 8 | pass / exam |
| CC 3 | Information and communication technologies in scientific research | 4 | pass |
| CC 4 | Intellectual property and commercialization of scientific research | 4 | pass |
| **Total for the cycle** | | **20** | |
| **Professional courses cycle** | | | |
| CC 5 | Pedagogical skills in higher education institutions | 4 | pass |
| CC 6 | Strategy for the development of consumer goods industry production and technologies | 4 | exam |
| CC 7 | Theoretical basics of technological support of production quality and efficiency | 4 | exam |
| CC 8 | Pedagogical practice | 4 | pass |
| **Total from the cycle** | | **16** | |
| **Total required components** | | **36** | |
| **Selected components of the educational program** | | | |
| DSFC | Disciplines of applicant's free choice | 12 | pass / exam |
| **The total volume of sampled components** | | **12** | |
| **TOTAL EDUCATIONAL PROFESSIONAL PROGRAM** | | **48** | |

### 2.1.2 Content of the scientific component of the educational scientific program of the third (educational scientific) level of higher education

Search for scientific sources and their processing. Defining the main tasks of the dissertation. Selection of optimal theoretical and / or experimental methods for their solution. Data mining, processing and analysis of the obtained results. Correction of initial hypotheses and problems in accordance with the results of the analysis. Preparation of scientific results for publication. Approbation of scientific results at scientific conferences of different levels. Generalization of research results. The final definition of the range of problems that will be considered in the dissertation, the establishment of the place of research in the context of the results of other authors. Formation of conclusions and recommendations. Registration of work and submission to the defense. Dissertation defense.

The main scientific results of the dissertation must be covered in at least three scientific publications that reveal the main content of the dissertation. Such scientific publications include:

- at least one article in periodical scientific editions of other states that are members of the Organization for Economic Cooperation and Development and / or the European Union, in the scientific field for which the applicant's dissertation was prepared. Such publication may be equated with publication in editions included in the list of scientific professional editions of

Ukraine with the assignment of category "A", or in foreign editions indexed in the databases Web of Science Core Collection and / or Scopus;

- articles in scientific editions included in the list of scientific professional editions of Ukraine with the assignment of category “B” (instead of one article a monograph or a section of a monograph published in co-authorship may be included).

A scientific publication in the edition referred to in the first - third quartiles (Q 1 - Q 3) according to the classification SC Imago Journal and Country Rank or Journal Citation Reports, is equated to two publications, which are credited in accordance with the first point of this paragraph.

Scientific publications are credited on the topic of the dissertation subject to the following conditions:

- substantiation of the obtained scientific results in accordance with the purpose of the article (task) and conclusions;
- publication of articles in scientific professional editions, which on the date of their publication are included in the list of scientific professional editions of Ukraine, approved in the manner prescribed by law;
- publication of articles in scientific periodicals of other states in the scientific field for which the applicant's dissertation was prepared, provided that the dissertation materials, determined by the council, are complete;
- publication of no more than one article in one issue (issue) of a scientific edition.

## 3. Certification form of applicants for higher education

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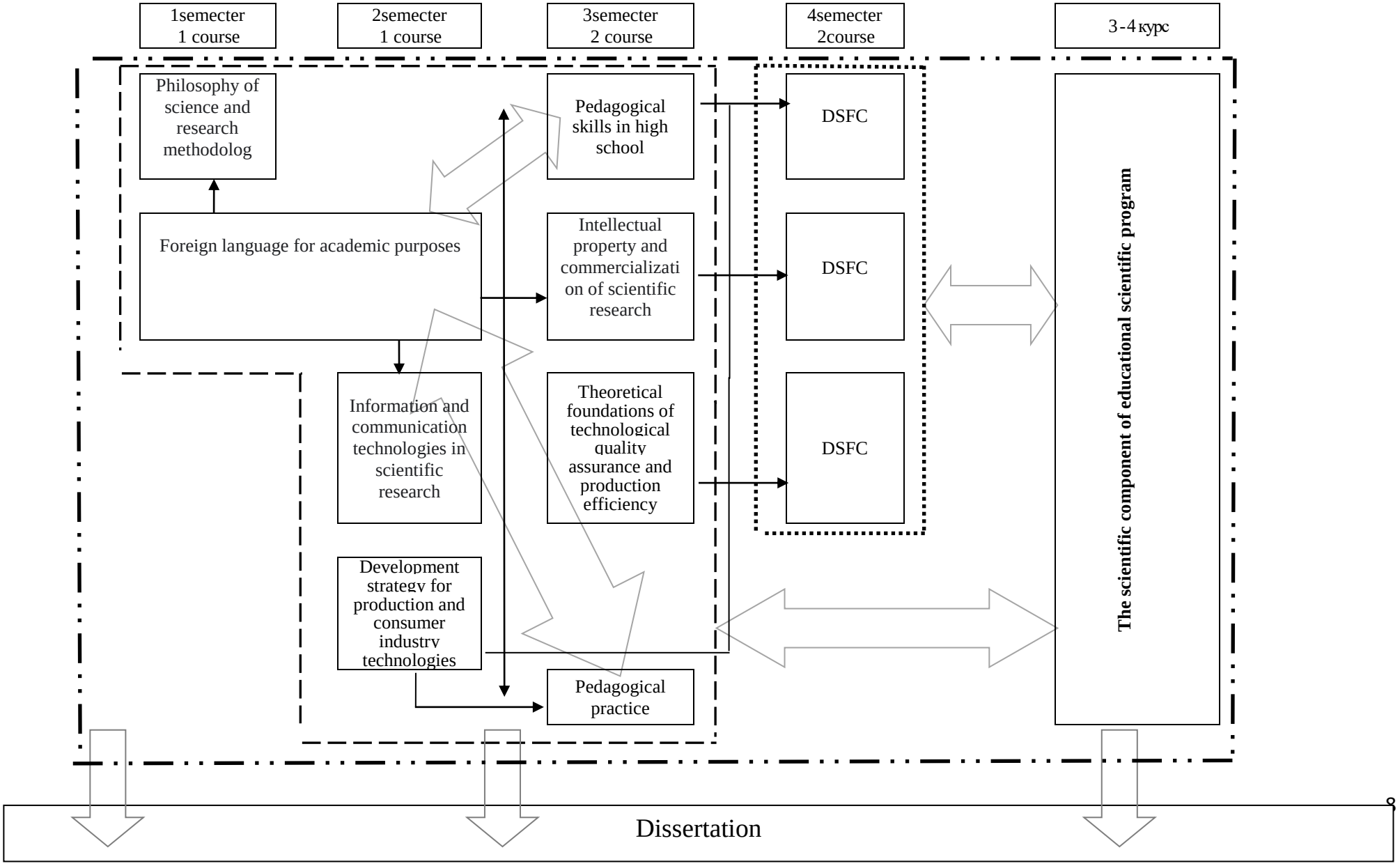
| **Attestation forms of applicants for higher education** | Certification of a graduate of an educational scientific program is carried out in the form of public defense of a dissertation for the degree of "Doctor of Philosophy" in the specialty «Consumer industry technologies». |
| **Document of higher education** | Doctor of Philosophy with the qualification of Doctor of Philosophy in Consumer industry technologies (educational scientific program «Consumer industry technologies»). |

## 2.2 Structural and logical scheme of preparation of the doctor of philosophy of the educational and scientific program «Consumer industry technologies»



## 4. Matrix of correspondence of program competencies

| | GC 1 | GC 2 | GC 3 | GC 4 | GC 5 | GC 6 | GC 7 | PC 1 | PC 2 | PC 3 | PC 4 | PC 5 | PC 6 | PC 7 | PC 8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CC1** | * | * | * | * | | | * | * | | | | | | | * |
| **CC2** | | * | | | * | * | * | | | | | | | | |
| **CC3** | * | * | * | | * | * | * | * | | * | * | * | * | | * |
| **CC4** | * | * | * | * | | * | * | * | * | * | | | | * | |
| **CC5** | | | | * | | * | * | * | * | | | | | | * |
| **CC6** | | | | | | | | | * | * | | | | * | |
| **CC7** | | | | | | | | | | | * | * | * | | |
| **CC8** | | | | * | | * | * | * | | | | | | * | * |

## 5. Matrix for providing software learning outcomes with relevant components of the educational program

| | PLO 1 | PLO 2 | PLO 3 | PLO 4 | PLO 5 | PLO 6 | PLO 7 | PLO 8 | PLO 9 | PLO 10 | PLO 11 | PLO 12 | PLO 13 | PLO 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CC1** | * | | | | | | | * | | | | | | * |
| **CC2** | | | | | | | | | * | * | | | | |
| **CC3** | | | * | | * | * | * | * | | | * | * | * | |
| **CC4** | | | * | | | | | | | * | | | * | |
| **CC5** | | | | * | * | | | | * | | | | | |
| **CC6** | | * | * | | | | | | | | | | | * |
| **CC7** | | | | | | * | * | | | | * | | * | |
| **CC8** | | | | * | * | | | | * | | | | | |