

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

KYIV NATIONAL UNIVERSITY
TECHNOLOGIES AND DESIGN

APPROVED BY THE SCIENTIFIC COUNCIL
Chairman of the Academic Council of KNUTD
_____ **Ivan GRISHCHENKO**

(protocol from « 17 » 12.2020 y. № _)

EDUCATIONAL PROFESSIONAL PROGRAM

Equipment for light industry and consumer services

Level of higher education	<u>second (master's)</u>
Degree of higher education	<u>master</u>
Field of knowledge	<u>13 Mechanical engineering</u>
Specialty	<u>133 Industry engineering</u>
Qualification	<u>master's degree in industrial engineering</u>

Kyiv 2020 year

LETTER OF AGREEMENT

Educational and professional program
Equipment for light industry and consumer services

Level of higher education _____ second (master's) _____

Degree of higher education _____ master _____

Field of knowledge _____ 13 Mechanical engineering _____

Specialty _____ 133 Industry engineering _____

Vice-rector for scientific and pedagogical activities (educational activities)

(date) _____ (signature) Oksana MORGULETS

Approved by the Academic Council of the Faculty of Mechatronics and Computer Technology

Protocol from « 7 » 12 2020 year № 5.

Dean Acting dean of the Faculty of Mechatronics and Computer Technology

(date) _____ (signature) Natalia CHUPRYNKA

Discussed and recommended at the meeting of the Department of Applied Mechanics and Machines

Protocol from « 07 » 12 2020 year № 4.

Head of the Department of Applied Mechanics and Machines

(date) _____ (signature) Alexander MANOILENKO

Guarantor of the educational program

(date) _____ (signature) Leonid BEREZIN

Put into effect by order of KNUTD from « 23 » 12.2020 year № 288.

PREFACE

DEVELOPED: Kyiv National University of Technology and Design

DEVELOPERS:

Guarantor of the educational program Berezin Leonid Mykolayovych, Ph.D., Associate Professor, Associate Professor of the Department of Applied Mechanics and Machines, Kyiv National University of Technology and Design;

Members of the working group:

Dvorzhak Volodymyr Mykolayovych, Candidate of Technical Sciences, Associate Professor, Associate Professor of the Department of Applied Mechanics and Machines, Kyiv National University of Technology and Design;

Koshel Serhiy Oleksandrovych, Candidate of Technical Sciences, Associate Professor, Associate Professor of the Department of Applied Mechanics and Machines, Kyiv National University of Technology and Design;

Gudym Andriy Hennadiyovych, student of the Faculty of Mechatronics and Computer Technologies, Kyiv National University of Technology and Design

EXTERNAL STAKEHOLDER REVIEWS:

- 1) Selivonchuk IS - General Director of MTK LLC, Ph.D .;
- 2) Kilimnik A.V. - Director of 42 DAY LLC, Kyiv;
- 3) Ivanova LI - Director of DANA-FASHION LLC;
- 4) Egorov VV - Director of Legpromengineering LLC, Ph.D .;

1. Profile of the educational and professional program

Equipment for light industry and consumer services

1 - General information	
Full name of the institution of higher education and structural unit	Kyiv National University of Technology and Design Department of Applied Mechanics and Machines
Degree of higher education and title qualification in the original language	Level of higher education - second (master's) Degree of higher education - master Field of knowledge - 13 Mechanical Engineering Specialty - 133 Industrial Engineering
Type of diploma and scope of educational program	Master's degree, single, 90 ECTS credits
Availability of accreditation	
Cycle / level	The National Qualifications Framework of Ukraine is the seventh level.
Prerequisites	Bachelor degree
Language of instruction	Ukrainian
Term of the educational program	
Internet address of the permanent post of the description of the educational program	http://knuvd.edu.ua/ekts/
2 - The purpose of the educational program	
<p>Training of specialists with deep knowledge, as well as basic and professional competencies in the field of mechanical engineering to carry out research, design, development of innovative technologies and equipment for the fashion industry with wide access to employment.</p> <p>The main objectives of the program are to train professionals who are able to develop innovative solutions and have the basics of designing technological machines of the fashion industry, including electronics and mechanics (mechatronics), using modern tools and tools for computer-aided design, engineering analysis and programming.</p>	
3 - Characteristics of the educational program	
Subject area, direction	<p>The program is focused on the formation of applicants for competencies to acquire deep knowledge, skills and abilities in the specialty.</p> <p>Compulsory educational components - 73%, of which: general training - 4.5%, vocational training - 36%, practical training - 23%, learning a foreign language - 4.5%, diploma design - 32%.</p> <p>Disciplines of free choice of students - 27% are selected from the university catalog in accordance with the approved procedure at the University.</p>
Orientation of the educational program	Educational and professional training for a master's degree.
The main focus of the educational program	Emphasis is placed on the formation and development of professional competencies in the field of mechanical engineering, related to the technological equipment of the fashion industry; a set of tools, methods and techniques aimed at designing, designing, operating and disposing of mechanical engineering products.

Features of the educational program	The educational and professional program is focused on deepening theoretical and special practical training, summarizing the results of design decisions and is performed in an active research environment aimed at the design, construction, operation and maintenance of technological equipment of the fashion industry.	
4 – Suitability of graduates for employment and further study		
Suitability for employment	The graduate is suitable for employment in organizations and institutions, modern enterprises, whose activities are based on the development, modernization and maintenance of equipment, systems and complexes used in the field of mechanical engineering, including the fashion industry. The specialist can hold primary positions: design engineer (mechanic), technological engineer (mechanic), mechanical engineer, equipment complete engineer, new equipment and technology implementation engineer, equipment complete set engineer.	
Further training	Lifelong learning to improve professional, scientific and other activities. Possibility to continue training according to the educational-scientific program of the third (educational-scientific) level of higher education (doctor of philosophy).	
5 – Teaching and assessment		
Teaching and learning	Student-centered and problem-oriented learning, learning through research, undergraduate practice and self-study are used. The system of teaching methods is based on the principles of purposefulness, binary - active direct participation of research and teaching staff and students of higher education. Forms of organization of the educational process: lecture, practical, laboratory classes, practical training, independent work, consultation, development of project work.	
Evaluation	Exams, tests, tests, project work, presentations, reports.	
6 - Program competencies		
Integral competence	IC	Ability to solve complex problems and problems of industrial engineering, involving research and / or innovation and characterized by uncertain conditions and requirements.
General competencies (GC)	GC1	Ability to use information and communication technologies.
	GC2	Ability to learn and master modern knowledge.
	GC3	Ability to search, process and analyze information from various sources.
	GC4	Ability to be critical and self-critical.
	GC5	Ability to adapt and act in a new situation.
	GC6	Ability to generate new ideas (creativity).
	GC7	Ability to identify, pose and solve problems.
	GC8	Ability to make informed decisions.
	GC9	Ability to work in a team.
	GC10	Ability to communicate with representatives of other professional groups of different levels (with experts from other fields of knowledge), including foreign languages.
Professional competencies (PC)	PC1	Ability to create, improve and apply quantitative mathematical, scientific and technical methods and computer software, apply a systematic approach to solving engineering problems of industrial

		engineering, in particular, in conditions of technical uncertainty.
	PC2	Critical understanding of advanced scientific facts, concepts, theories, principles and the ability to apply them to solve complex problems of industrial engineering and ensure sustainable development.
	PC3	Ability to create new techniques and technologies in the field of mechanical engineering.
	PC4	Awareness of promising tasks of modern production aimed at meeting the needs of consumers, mastery of trends in innovative development of industry technologies.
	PC5	Ability to develop and implement plans and projects in the field of mechanical engineering and related activities, to carry out relevant business activities.
	PC6	Ability to integrate knowledge and solve complex problems in broad multidisciplinary contexts.
	P7	Ability to demonstrate creative and innovative potential in project development of technological equipment of the fashion industry.
	PC8	Ability to critically comprehend problems in teaching, professional and research activities at the level of the latest advances in engineering and at the boundaries of subject areas.
	PC9	Ability to apply specialized conceptual knowledge of the latest methods and techniques of design and research of structures, technological equipment of the fashion industry.
7– Program results teaching		
Knowledge and understanding:		
PRT 1		Knowledge and understanding of the principles of technological, fundamental and engineering sciences that underlie the branch engineering of the relevant industry.
PRT 2		Knowledge and understanding of mechanics and mechanical engineering and prospects of their development.
PRT 3		To know and understand the processes of industrial engineering, to have skills of their practical use.
PRT 4		Know and understand the methods of designing machines and equipment for the fashion industry.
Application of knowledge and understanding (skills):		
PRT 5		Carry out engineering calculations to solve complex problems and practical problems in the field of mechanical engineering.
PRT 6		Analyze engineering objects, processes and methods.
PRT 7		Search for the necessary scientific and technical information in available sources, in particular, in a foreign language, analyze and evaluate it.
PRT 8		Prepare production and operate products of branch mechanical engineering during the life cycle.
PRT 9		Be able to work with different sources of technical information on physical and electronic media.
Formation of judgments:		
PRT 10		Use modern methods of scientific knowledge and carry out research in industrial engineering, in particular for technological equipment of the fashion industry.
PRT 11		Freely communicate on professional issues in state and foreign languages orally and in writing, discuss the results of professional activities with specialists and non-specialists, argue their position on issues of discussion.
PRT 12		Substantiate and evaluate innovative projects, risks of occupational hazards in

	enterprises, knowledge of methods of promoting them in the market, the ability to perform econometric and scientometric assessments.
8 – Resource support for program implementation	
Staffing	All scientific and pedagogical workers who provide educational and professional program in qualification correspond to the profile and direction of the disciplines taught, have the necessary experience of pedagogical work and experience of practical work. In the process of organizing the educational process, professionals with experience in research / management / innovation / creative work and / or work in the specialty and foreign lecturers are involved.
Material and technical support	Logistics allows to fully ensure the educational process throughout the training cycle of the educational program. The condition of the premises is certified by sanitary and technical passports that comply with existing regulations.
Information and educational and methodological support	The program is fully equipped with an educational and methodological complex of all components of the educational program, the availability 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, providing the acquisition of general and / or professional competencies.
International credit mobility	The program develops prospects for participation and internships in research projects and academic mobility programs.
Training of foreign applicants for higher education	Training of foreign applicants for higher education is carried out according to accredited educational programs.

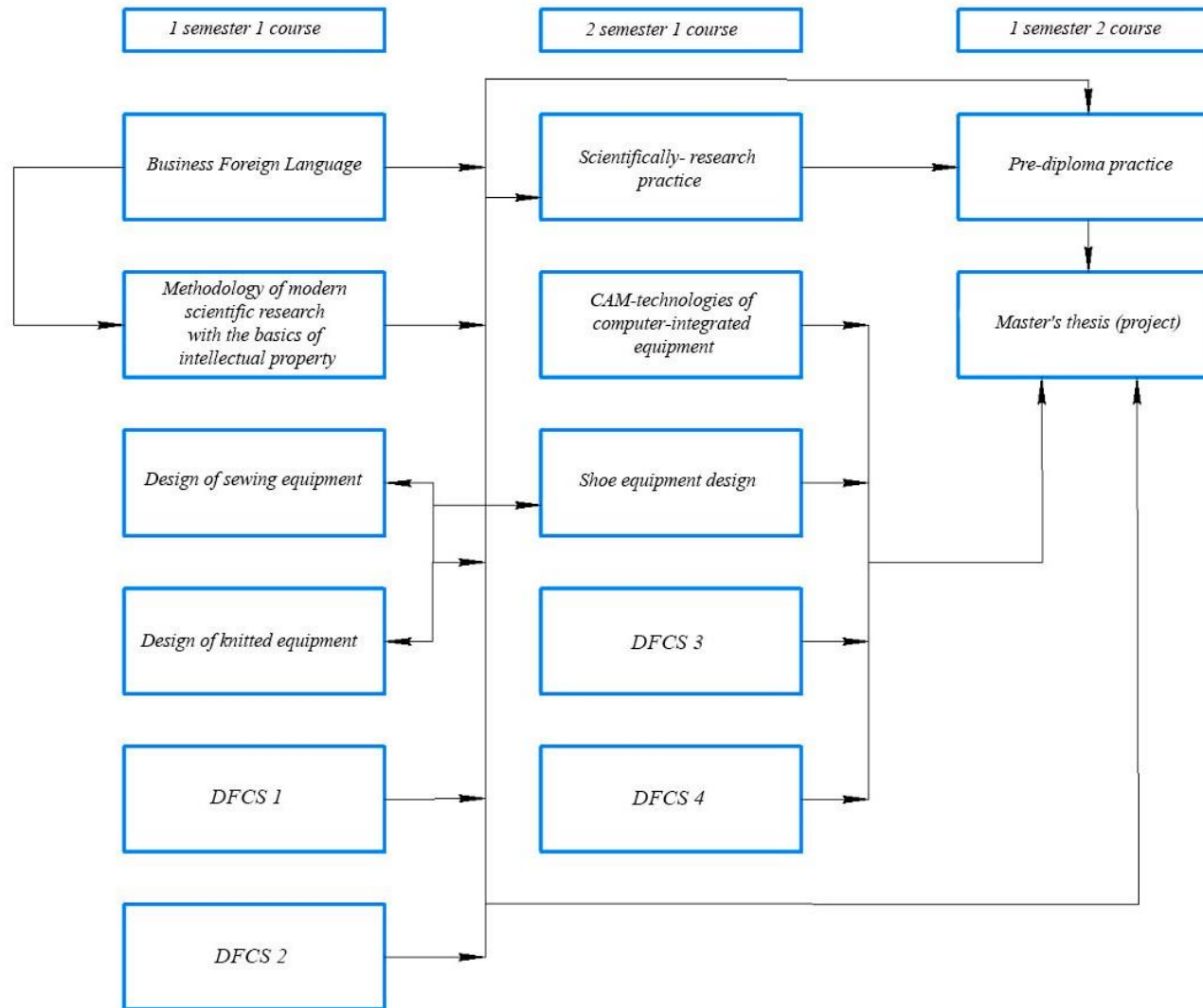
2. The list of components of the educational-professional program and their logical sequence

2.1 List of components of the educational-professional program of the second (master's) level of higher education

Course code	Components of the educational program (academic disciplines, term papers (projects), practices, qualification work)	Number of loans	Form of final control
1	2	3	4
Required training discipline			
Disciplines of general training			
EC 1	Business Foreign Language	3	test
EC 2	Methodology of modern scientific research with the basics of intellectual property	3	exam
Total from the cycle		6	
Дисципліни Disciplines of professional training професійної підготовки			
EC 3	Design of sewing equipment	6	exam
EC 4	Design of knitted equipment	6	exam
EC 5	Shoe equipment design	6	exam
EC 6	CAM-technologies of computer-integrated equipment	6	exam
EC 7	Scientifically- research practice	6	test
EC 8	Pre-diploma practice	9	test
EC 9	Master's thesis (project)	21	certification
Total from the cycle		60	

The total amount of required components		66	
Selective components of the educational program			
DFCS	Disciplines of free choice of the student	24	test
TOTAL VOLUME OF THE EDUCATIONAL PROGRAM		90	

2.2. Structural and logical scheme of preparation of the master of the educational and professional program Equipment for light industry and consumer services of a specialty 133 Industry engineering



3. Form of certification of applicants for higher education

Forms of certification of applicants for higher education	Certification of a graduate of an educational program is carried out in the form of public defense of a master's thesis (project).
Document of higher education	Master's degree with educational qualification: master's degree in industrial engineering of the educational program Equipment for light industry and consumer services.

4. Matrix of correspondence of program competencies to the components of the educational-professional program

	GC1	GC2	GC3	GC4	GC5	GC6	GC7	GC8	GC9	GC10	PC1	PC2	PC3	PC4	PC5	PC6	PC7	PC8	PC9	
EC1	+	+	+						+	+										
EC2	+	+	+			+	+	+		+	+				+	+	+			
EC3							+				+	+	+	+		+	+			+
EC4							+				+	+	+	+		+				+
EC5							+				+	+	+	+		+				+
EC6	+											+				+				
EC7	+	+	+	+	+	+	+	+	+	+				+	+	+	+	+	+	
EC8	+	+	+	+	+	+	+	+	+	+			+	+		+	+	+	+	
EC9	+		+	+	+	+	+	+			+	+	+	+	+	+	+	+	+	+

5. Matrix for providing program learning outcomes with relevant components of the educational-professional program

	PRT 1	PRT 2	PRT 3	PRT 4	PRT 5	PRT 6	PRT 7	PRT 8	PRT 9	PRT 10	PRT 11	PRT 12
EC1							+		+		+	
EC2						+			+	+		+
EC3	+	+	+	+	+			+				
EC4	+	+		+	+			+				
EC5	+	+		+	+			+				
EC6								+	+			
EC7		+	+			+	+	+	+	+		+
EC8		+	+			+	+	+	+	+	+	+
EC9	+		+		+	+	+		+	+	+	+

EC 1	Business Foreign Language Ділова іноземна мова	3	test
EC 2	Methodology of modern scientific research with the basics of intellectual property	3	Методологія сучасних наукових досліджень з основами інтелектуальної власності
Total from the cycle		6	
Дисципліни Disciplines of professional training професійної підготовки			
EC 3	Design of sewing equipment	6	Проектування швейного обладнання
EC 4	Design of knitted equipment	6	Проектування трикотажного обладнання
EC 5	Shoe equipment design	6	Проектування трикотажного обладнання
EC 6	CAM-technologies of computer-integrated equipment	6	САМ-технології комп'ютерно-інтегрованого обладнання
EC 7	Scientifically- research practice	6	Науково-дослідна практика
EC 8	Pre-diploma practice	9	Переддиплом на практика
EC 9	Master's thesis (project)	21	Дипломна магістерська робота (проект)

ДВВС discipline of free choice of students DFCS