

Textile design technologies

1 cycle

Professional Higher Education study programme

1 General description of the programme

Professional Higher Education study programme called "Textile design technologies" is a modern study programme, basing on interdisciplinarity, and interaction of the engineering together with the engineering design, and is structured in accordance with the latest trends in the field of higher-education of textile students, and students of engineering design. It lasts three years and a student has to acquire 180 ECTS points. The study programme has two directions: "Design and development of the product", and "Materials and textile technologies".

The concept of the study program "Textile design technologies" is modern, and is basing on the latest findings in the fields of design, textile materials, and modern technologies. By creating it, study programmes of some renowned European high professional schools, such as the Hochschule Niederrhein from the Federal republic of Germany and the Hogeschool Gent from Belgium were followed.

Learning content, in addition to the necessary theoretical basics, covers also all professional skills that are necessary for high productive and high-quality engineering work in the modern textile and clothing industry. Special emphasis is on the practical knowledge which is important for new products development i.e. improvement of an existing product with high added value, and the modernisation of production technologies. Graduates of the undergraduate professionally oriented study programmes will be able to apply acquired knowledge for solving the complex professional problems.

The objective of the study programme is to develop creativity of the student and ability for flexible integration and application of knowledge from different areas. The study program namely pointed out the practical orientation, as well as the complex interaction with the development trends, the bases of knowledge and new research concepts, which is the condition for the education of successful and efficient engineers.

Together with this, the higher education professional study programme "Textile design technologies" is constructed to provide the graduates also easy transition from the higher education programme to the master's study programme of 2-nd degree "Design and textile materials".

2 Short description of the study modules

2.1. Design and Product Development

Graduates acquire the knowledge and skills to design different textile products, which are based on the understanding of the history of industrial, graphic and unique design as well as on the theory of design concepts. With the acquired knowledge, they will be capable to design textile products and garment (concepts, sketches, collections, fashion stories, etc.) and to perform the design projects with 2D and 3D graphics tools. They will master the comprehensive concept of product development with the detail knowledge and understanding of the pattern design, modelling of garment and garment manufacturing processes. The graduates will be qualified to use computer tools and techniques in their professional work and will be skilled to supervise and control the technological processes for manufacturing garments.

2.2. Materials and textile technologies

The students from the study field Materials and textile technologies do not only acquire the knowledge in the field of classical textile technologies, but they familiarise themselves with a wide variety of special materials, their purposes and processing as well as with the importance of ecology, cleaning procedures, hygiene textiles and clothing problems. Based on the acquired knowledge related to new materials and technological processes, informatics, computer science and design, the graduates are able to think and design creatively. Their knowledge of textile fibers, their properties, new advanced textile materials and textile technologies provides them with a wide-ranging understanding of technological procedures and processes (construction of yarns, woven and knitted fabrics, nonwovens, dyeing and finishing of textiles, clothing engineering) as well as the knowledge concerning methods of testing of different textile materials.

3 General learning outcomes and competencies of the students

Following the Professional Higher Education study programme "Textile design technologies" the students in the context of general competences will acquire:

- Qualification to be able, on the basis of the captured knowledge of basic natural sciences, informatics, design, materials and knowledge of the principles of technical and ecological problems, as well as good engineering practice, to create and to design products in terms of the corresponding manufacturing, quality and the price.
- Ability to understanding and to expertise practical problems associated with the interdependence between technology and art, i.e. with the engineering design of textile products and the introduction of modern technologies into practice.

- Ability to design (designing, construction) textile forms in terms of appropriate design, craftsmanship, quality and price to achieve greater innovation resulting in the competitiveness of the product/company.
- Ability to perform independent professional judgment.
- Ability to use knowledge in practice.
- Autonomy in professional work.
- Ability for faster and more creative connection of theory and practice with organised professional and mentor-guided practice in the form of laboratory work, studio work and practical training.
- Ability to use modern tools from the field of information technologies and specific professional contents.
- Increased creativity and innovation as a result of interdisciplinary study.
- Ability for autonomous and team work.
- Ability to communicate with experts and colleagues in the domestic and international space.
- Ethical reflection and commitment to professional ethics.

4 The main subject-specific learning outcomes and competencies of the students

With the Professional Higher Education study programme “Textile Design Technologies” the students will gain the following subject-specific competences:

- Ability to integrate knowledge from the field of engineering and the art (knowledge from the subject areas: design theory, art-expression, textile materials, advanced textile materials and technologies, processing and testing of textile materials, manufacturing of textiles and clothing, designing and construction of textiles and clothing, modelling and pattern grading, computer science and informatics, environmental protection, measurement techniques, and waste management handling).
- Understanding of the history of industrial, graphic and unique design, design concepts and design activities in the context of the society development, the culture, aesthetics, art, function and technology.
- Knowledge and understanding of designing and realization of the planned design projects by using 2D and 3D graphic tools together with the knowing the basics of freehand drawing.
- Knowledge and understanding of textile materials, structure and properties of fibres, and the dependence between the properties of the fibres and their use.
- Knowledge and understanding the methods of textile materials’ testing.
- Knowledge of new advanced textile materials and technologies (nanomaterials, technical textiles, textiles for medicine, sports, construction and architecture, transport...).

- Ability to control the existing technological processes of textiles and textile products manufacturing, and their updates.
- Ability of independent, innovative and creative work with technological projects related to the development of a new product, or technologies updating.
- Knowledge and understanding of textiles and clothing design planning (concepts, sketches, conceptual paper, coloured cards, the cards of the materials, collections, fashion stories, etc.), and visual studies (the study of space, form, surface, shapes, typefaces, colours, textures, compositions, rhythms, balances, etc.).
- Knowledge and understanding the process of designing, pattern grading, and clothing modelling for different purpose of use.
- Knowledge and understanding the ready-made processes of clothing manufacturing and the material governance to achieve the product quality.
- Knowledge and understanding the technological processes of yarns, threads, fabrics, knitwear, non-woven, and understanding the impact of technological stages to the properties of the line and flat textiles.
- Knowledge and understanding the construction of yarns, fabrics, knitwear, non-woven textiles, and the knowledge of the impact of textiles construction on their functional characteristics and properties.
- Knowledge of the textile treatment theory (bleaching, dyeing, finishing, printing) and the environmental protection requirements in finishing processes.
- Knowledge and understanding the textile care and hygiene and the problem of waste water connected to laundries and dry-cleaning services.
- Knowledge and understanding the application of computational tools and technologies in professional work.
- Ability to understand the concept of comprehensive quality management and standardization in the textile and clothing industry

5 General curriculum

Professional Higher Education study programme “Textile Design Technologies” is divided into the following parts:

Part	Part of study	Duration	ECTS credits
1	Joint courses	1 year (2 semesters)	60
2	Joint /Module courses	1 year (2 semesters)	60
3	Module courses	1 year (2 semesters)	60
Total:		3 years	180

6 Detailed curriculum

TEXTILE DESIGN TECHNOLOGIES									
MATERIALS AND TEXTILE TECHNOLOGIES - DESIGN AND PRODUCT DEVELOPMENT									
1. semester - winter									
Subject	Lecturer	Lectures	Seminar	Laboratory Work	Tutorial	Individual Student's Work	Summa	ECTS	
HISTORY AND METHODS OF DESIGN	Šterman Sonja	25		25		70	120	4	
COLOUR SCIENCE	Fakin Darinka	25		25		70	120	4	
COMPUTER SCIENCE	Stjepanović Zoran	25		40		85	150	5	
FIBRES	Strnad Simona	40		40		100	180	6	
CHEMISTRY	Vončina B., Volmajer Valh J.	25		40		85	150	5	
ENVIRONMENTAL PROTECTION	Lobnik Aleksandra	25	12			53	90	3	
FOREIGN LANGUAGES (ENGLISH or GERMAN)	Potočnik N., Mulej S.	25		12		53	90	3	

TEXTILE DESIGN TECHNOLOGIES									
MATERIALS AND TEXTILE TECHNOLOGIES - DESIGN AND PRODUCT DEVELOPMENT									
2. semester - summer									
Subject	Lecturer	Lectures	Seminar	Laboratory Work	Tutorial	Individual Student's Work	Summa	ECTS	
TEXTILE AND FASHION DESIGN	Šterman Sonja	25	12	25		88	150	5	
TEXTILE TECHNOLOGIES	Stjepanović, Dobnik Dubrovski	25		25		70	120	4	
FINISHING TECHNOLOGIES	Fakin Darinka	25		25		70	120	4	
QUALITY MANAGEMENT AND STANDARDIZATION	Kreže Tatjana	30	20			70	120	4	
STATISTICS	Špacapan Simon	25		25		70	120	4	
DIGITAL AND FREEHAND PRESENTATION TECHNIQUES	Šterman Sonja	12	12	40		86	150	5	

	CREATIVE WORKSHOP	Šterman Sonja	12		40		68	120	4
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TEXTILE DESIGN TECHNOLOGIES									
MATERIALS AND TEXTILE TECHNOLOGIES									
3. semester - winter									
	Subject	Lecturer	Lectures	Seminar	Laboratory Work	Tutorial	Individual Student's Work	Summa	ECTS
	APPAREL TECHNOLOGY	Geršak Jelka	25		25		70	120	4
	CONSTRUCTION OF TEXTILES	Dobnik Dubrovski Polona	25	20	32		103	180	6
	DIGITAL DESIGN AND PRINTING	Šterman Sonja, Kurečič Manja	25		40		85	150	5
	FIBRES PROPERTIES AND APPLICATION	Kreže Tatjana, Strnad Simona	30		20		70	120	4
	ORGANIC CHEMISTRY	Volmajer Valh Julija	25		25		130	180	6
	DYEING OF MATERIALS	Fakin Darinka	25		25		100	150	5

TEXTILE DESIGN TECHNOLOGIES									
MATERIALS AND TEXTILE TECHNOLOGIES									
4. semester - summer									
	Subject	Lecturer	Lectures	Seminar	Laboratory Work	Tutorial	Individual Student's Work	Summa	ECTS
	TECHNICAL TEXTILES	Vončina Bojana	25	12	25		88	150	5
	TESTING	Kreže Tatjana	40		40		100	180	6
	BASIC TEXTILE CARE	Kurečič Manja	25		25		70	120	4
	YARNS AND KNITTED FABRICS	Stjepanović Zoran	25		25		70	120	4
	FINISHING	Šauperl Olivera	20		30		100	150	5
	ADVANCED TEXTILE MATERIALS AND TECHNOLOGIES	Strnad Simona	30	12	20		118	180	6

TEXTILE DESIGN TECHNOLOGIES									
MATERIALS AND TEXTILE TECHNOLOGIES									
5. semester - winter									
Subject	Lecturer	Lectures	Seminar	Laboratory Work	Tutorial	Individual Student's Work	Summa	ECTS	
TEXTILE CARE AND HYGIENE	Kurečić Manja	25	12	25		88	150	5	
ECOLOGY OF FINISHING PROCESSES	Fakin Darinka	25		25		70	120	4	
WOVEN AND NONWOVEN FABRICS	Dobnik Dubrovski Polona	25	13	12		100	150	5	
TEXTILE DAMAGES AND RECLAMATIONS	Strnad Simona, Šauperl Olivera	30		20		70	120	4	
Optional subject 1 in 2		50	24	80		206	360	12	

TEXTILE DESIGN TECHNOLOGIES									
MATERIALS AND TEXTILE TECHNOLOGIES									
6. semester - summer									
Subject	Lecturer	Lectures	Seminar	Laboratory Work	Tutorial	Individual Student's Work	Summa	ECTS	
LABORATORY WORK	Kurečić Manja			15		165	180	6	
Optional subject 3		25	12	40		103	180	6	
PROFESSIONAL WORK	Nahtigal Igor				35	325	360	12	
DIPLOMA WORK					15	165	180	6	

TEXTILE DESIGN TECHNOLOGIES									
DESIGN AND PRODUCT DEVELOPMENT									
3. semester - winter									
	Subject	Lecturer	Lectures	Seminar	Laboratory Work	Tutorial	Individual Student's Work	Summa	ECTS
	APPAREL TECHNOLOGY	Geršak Jelka	25		25		70	120	4
	CONSTRUCTION OF TEXTILES	Dobnik Dubrovski Polona	25	20	32		103	180	6
	DIGITAL DESIGN AND PRINTING	Šterman Sonja, Kurečič Manja	25		40		85	150	5
	GARMENT MANUFACTURING PREPARATION	Geršak Jelka	25		40		85	150	5
	TEXTILE PRODUCT DESIGN	Šterman Sonja	25		40		85	150	5
	GARMENT CONSTRUCTION	Rudolf Andreja	25		40		85	150	5

TEXTILE DESIGN TECHNOLOGIES									
DESIGN AND PRODUCT DEVELOPMENT									
4. semester - summer									
	Subject	Lecturer	Lectures	Seminar	Laboratory Work	Tutorial	Individual Student's Work	Summa	ECTS
	TECHNICAL TEXTILES	Vončina Bojana	25	12	25		88	150	5
	TESTING	Kreže Tatjana	40		40		100	180	6
	FASHION DESIGN	Šterman Sonja	40		40		100	180	6
	BASIC TEXTILE CARE	Kurečič Manja	25		25		70	120	4
	PATTERN MODELING AND GRADING	Rudolf Andreja	25		50		105	180	6
	PROTOTYPE WORKSHOP	Rudolf Andreja	12		25		53	90	3

TEXTILE DESIGN TECHNOLOGIES									
DESIGN AND PRODUCT DEVELOPMENT									

5. semester - winter									
Subject	Lecturer	Lectures	Seminar	Laboratory Work	Tutorial	Individual Student's Work	Summa	ECTS	
COMPUTER AIDED GARMENT CONSTRUCTION	Rudolf Andreja	30		45		105	180	6	
GARMENT MANUFACTURING PROCESSES AND MATERIALS MANAGEMENT	Geršak Jelka	30		30		90	150	5	
FASHION ILLUSTRATION AND TECHNICAL DRAWING	Šterman Sonja, Rudolf A.	15		30		75	120	4	
PROTOTYPES PRODUCTION	Rudolf Andreja			45		45	90	3	
Optional subject 1 in 2		80		80		200	360	12	

TEXTILE DESIGN TECHNOLOGIES									
DESIGN AND PRODUCT DEVELOPMENT									
6. semester - summer									
Subject	Lecturer	Lectures	Seminar	Laboratory Work	Tutorial	Individual Student's Work	Summa	ECTS	
STUDIO WORK				15		165	180	6	
Optional subject 3		40		40		100	180	6	
PROFESSIONAL WORK	Nahtigal Igor				35	325	360	12	
DIPLOMA WORK					15	165	180	6	

Optional subjects

TEXTILE DESIGN TECHNOLOGIES									
MATERIALS AND TEXTILE TECHNOLOGIES									
5. + 6. semester									
	Subject	Lecturer	Lectures	Seminar	Laboratory Work	Tutorial	Individual Student's Work	Summa	ECTS
	TEXTILES FOR MEDICAL AND HYGIENE APPLICATIONS	Strnad Simona, Fras Zemljič L.	30	12	35		103	180	6
	TEXTILES FOR PROTECTION AND SPORTS	Šauperl Olivera	30	20	27		103	180	6
	FUNCTIONAL TREATMENT OF TEXTILES	Fras Zemljič Lidija	25	12	40		103	180	6
	INTERDISCIPLINARY OF COLOUR	Fakin Darinka	25	12	40		103	180	6
	BIOTECHNOLOGICAL PROCESSES	Kokol Vanja	25	12	40		103	180	6
	DIGITAL PRINTING	Kurečič Manja	25	12	40		103	180	6

TEXTILE DESIGN TECHNOLOGIES									
DESIGN AND PRODUCT DEVELOPMENT									
5. + 6. semester									
	Subject	Lecturer	Lectures	Seminar	Laboratory Work	Tutorial	Individual Student's Work	Summa	ECTS
	ERGONOMIC PLANNING OF WORKPLACES	Vujica Herzog Nataša	25		25		70	120	4
	ACCESSORIES DESIGN	Šterman Sonja	40		40		100	180	6
	TEXTILE DESIGN	Šterman Sonja	40		40		100	180	6
	GARMENTS AND COMFORT	Geršak Jelka	40		40		100	180	6
	STRUCTURES OF TECHNOLOGICAL OPERATIONS	Geršak Jelka	40		40		100	180	6
	ECODESIGN	Vončina Bojana, Šterman Sonja	40		40		100	180	6
	PATTERN DEVELOPMENT FOR SPECIAL PURPOSES	Rudolf Andreja	40		40		100	180	6

TEXTILE DESIGN TECHNOLOGIES									
MATERIALS AND TEXTILE TECHNOLOGIES / DESIGN AND PRODUCT DEVELOPMENT									
5. + 6. semester									
	Subject	Lecturer	Lectures	Seminar	Laboratory Work	Tutorial	Individual Student's Work	Summa	ECTS
	NANOMATERIALS	Strnad Simona	25	12	40		103	180	6
	NEW COMPUTER BASED TECHNOLOGIES	Stjepanović Zoran	25	12	40		103	180	6
	SPORT	Lipošek Silvester	12		65		13	90	3