

# Curriculum

## 1<sup>st</sup> year

Subject	Hours					ECTS
	L	S	E	A	Σ	
<b>1<sup>st</sup> semester</b>					<b>450</b>	<b>30</b>
Information technologies	30	0	30	0	60	4
Aesthetics of textiles and clothing	30	30	0	0	60	4
English for specific purposes	0	60	0	0	60	4
Textile raw materials	45	30	15	0	90	6
Yarns	30	30	30	0	90	6
Physical-mechanical properties of textiles and clothing	30	30	30	0	90	6
<b>2<sup>nd</sup> semester</b>					<b>450</b>	<b>30</b>
Basics of finishing	45	45	0	0	90	6
Development of clothing patterns	30	15	15	0	60	4
Woven fabrics	30	15	45	0	90	6
Knitted fabrics and knitwear	30	30	30	0	90	6
Nonwovens	30	0	30	0	60	4
Basics of visual expression	30	30	0	0	60	4
<b>TOTAL</b>					<b>900</b>	<b>60</b>

### Curriculum tags:

L - lectures,

S - seminars,

E - exercises,

A – advanced work (project work),

ECTS – credit points by the European credit system (1 credit point means 30 hours of student obligation).

## 2<sup>nd</sup> year

Subject	Hours					ECTS
	L	S	E	A	Σ	
<b>3<sup>rd</sup> semester</b>					<b>450</b>	<b>30</b>
Statistics	30	0	30	0	60	4
Fashion design	30	15	15	0	60	4
Non-wovens and composites	45	0	45	0	90	6
Basic methods in textile testing	30	15	30	15	90	6
Colour measurement in textiles	30	15	15	0	60	4
Dyeing	45	0	45	0	90	6
<b>4<sup>th</sup> semester</b>					<b>450</b>	<b>30</b>
Planning textiles and comfortableness of clothing	60	30	0	0	90	6
Apparel manufacturing	30	0	30	0	60	4
Textile printing	30	30	30	0	90	6
Textile care 1	30	15	15	0	60	4
Facultative complex 2					150	10
<b>TOTAL</b>					<b>900</b>	<b>60</b>

<b>Facultative complex 2</b>					<b>450</b>	<b>30</b>
Introduction to fashion design	30	30	0	30	90	6
Development of clothing patterns	30	15	15	0	60	4

## 3<sup>rd</sup> year

Subject	Hours					ECTS
	L	S	E	A	Σ	
<b>5<sup>th</sup> semester</b>					<b>450</b>	<b>30</b>
Practical training					0	30
<b>6<sup>th</sup> semester</b>					<b>450</b>	<b>30</b>
Facultative courses						24
Diploma						6
<b>TOTAL</b>					<b>900</b>	<b>60</b>

## Facultative courses

Facultative courses	Hours					ECTS
	L	S	E	A	Σ	
Computer-assisted design of yarns and woven fabrics	30	0	30	0	60	4
Computer-assisted design of knitted fabrics and knitwear	15	0	45	0	60	4
Computer systems in apparel manufacturing	30	0	30	0	60	4
Computer-assisted design for printing	30	15	15	0	60	4
Production planning and management	45	30	15	0	90	6
Entrepreneurship	30	15	15	0	60	4
Quality management	30	60	0	0	90	6

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## Description of courses

**Information technology** (4 ECTS): computer networks and services; the Internet and the World Wide Web; standards and formats; author's rights in the globalised access to multimedia content; biometrics; basics of multimedia, multi-modality and interactivity.

**Aesthetics of textiles and clothing** (4 ECTS): origin, function and the meaning of clothing; the psychology and sociology of fashion; the history of clothes and textiles; fashion designers; specific areas of clothing; fashion accessories; graphic design in advertising and fashion.

**English for specific purposes** (4 ECTS): upgrading general knowledge of English to a higher professional level; reading strategies and discourse of professional texts; determining key words and writing abstracts, articles and reports; description of graphs; business communication; taking part in discussions.

**Textile raw materials** (6 ECTS): textiles and technical fibres: basic concepts, systematisation, historical development, identification, production technology, molecular structure, basics of supra-molecular structure, properties, fibres important for marketing, modification, innovations, functional properties of fibres in products.

**Yarns** (6 ECTS): spinning properties of yarns; types and properties of yarns; technological processes of producing yarn; planning and coordination of the spinning process; significance and effect of technological stages on the properties, productivity and price of spinning yarn.

**Physical-mechanical properties of textiles and clothing** (6 ECTS): interaction between the geometry and physical properties of fibre and textiles; geometric and physical properties of textiles and clothing; interaction between geometric parameters and physical properties of the textile product.

**Basics of finishing** (6 ECTS): colour and chemical structure of dyes; determining the concentration of dyes in a solution and on fibres; solubility of dyes; aggregation of dyes;

classification of dyeing systems; dye-fibre interaction; thermodynamics of dyeing; kinetics of dyeing.

**Development of clothing patterns** (4 ECTS): clothing anthropometry; technological documentation; pattern construction/modelling; pattern grading; pattern adaptation; computer systems for pattern construction/modelling/grading.

**Woven fabrics** (6 ECTS): structure, type and classification of textiles; properties of woven fabrics; stages of weaving production; types of weaving machines and their classification; mechanisms of weaving machines and their functions.

**Knitted fabrics and knitwear** (6 ECTS): the use of knitted fabrics and knitwear; types and properties of knitted fabrics and knitwear; parameters and planning of knitted fabrics and knitwear; planning knitting processes; quality of knitted fabrics and knitwear; care of knitted fabrics and knitwear; CAD/CAM/CIM systems in knitting.

**Nonwovens** (4 ECTS): definition and types of non-woven textiles; historical development and trends in non-woven textiles; classification of non-woven textiles; non-woven textile production processes; processing non-woven textiles.

**Basics of visual expression** (4 ECTS): visual conception and principles; distinguishing between the figure and background; the role of contrast and assimilation; the principles of organisation of the field of vision; brightness and colour; artistic elements; sensory and psychological elements of space; depth guidelines.

■ **Statistics** (4 ECTS): planning analysis; basic statistical concepts; analysis of distribution frequency; theoretical distribution models; analysis of two values; analysis of multiple values; correlation analysis; regression analysis.

■ **Fashion design** (4 ECTS): development of industrial design; functions of clothing; ideals of beauty; mass-produced ready-made clothing; haute couture; analysis of the relation between the human body and clothing; visual illusions; changing the silhouette.

■ **Non-wovens and composites** (6 ECTS): definition and types of non-woven textiles; historical development and trends in non-woven textiles; classification of non-woven textiles; non-woven textile production processes; processing

non-woven textiles.

■ **Basic methods in textile testing** (6 ECTS): the importance and use of textile testing; standards and their uses; sampling and evaluation of measurements;

basic methods of fibre testing; basic methods of yarn testing; basic methods of fabric testing; basic chemical analysis of textiles.

■ **Colour measurement in textiles** (4 ECTS): electromagnetic radiation; light absorption; systems for the determination of colour and whiteness; measurement of colour and whiteness.

■ **Dyeing** (6 ECTS): technological water preparation; preparing of dyes; dyeing procedures; dyeing of natural, chemical and synthetic fibres; auxiliaries and methods for after-treatment of dyed material; colour fastness.

■ **Planning textiles and comfortableness of clothing** (6 ECTS): classification of clothing textiles, trimmings, functional properties of textiles, technological process of producing textiles—from fibre to finished fabric; analysis and evaluation of the comfort of clothing textiles: thermo-physiological, handle, movement and aesthetic comforts.

■ **Apparel manufacturing** (4 ECTS): ISO standards for apparel manufacturing; development of a product; preparing collections; preparing production; organisation of production; technological documentation; technological demands of ready-made wear; quality requirements; automation; production management.

■ **Textile printing** (6 ECTS): historical development; mechanical devices and equipment; procedures for producing printing forms; procedures of pattern reproduction; preparing fabrics; dyes; printing pastes; fixing and subsequent processing; special printing procedures; environmental issues in printing.

■ **Textile care 1** (4 ECTS): processes of textile care; theoretical approaches of wetting and washing; surface active agents; washing agents; soils; water as washing media, products and procedures for dry cleaning; removal of stains; environmental aspect.

■ **Introduction to fashion design** (6 ECTS): fashion ranges; haute couture; generally designed collections at a lower price range; development of fashion

trends; selection of collections; specific design; process of fashion design; the designer's role in the development of new collections.

■ **Development of clothing patterns** (4 ECTS): clothing anthropometry; technological documentation; pattern construction/modelling; pattern grading; pattern adaptation; computer systems for pattern construction/modelling/grading.

■ **Practical training** (30 ECTS): verification and upgrading of theoretical knowledge in the working environment; company organisation and operation; active integration into the working environment in production (learning about machine equipment, development, planning, planning products, processes and services, management of finishing processes and understanding quality).

■ **Computer-assisted design of yarns and woven fabrics** (4 ECTS): simple and demanding construction of yarn; computer simulation of yarn and textiles; possibilities of colour and other types of patterning; colour metrics in weaving; ArahPaint, ArahWeave and ArahDrape computer programs.

■ **Computer-assisted design of knitted fabrics and knitwear** (4 ECTS): CAD systems in weft knitting; CAD systems in warp knitting; principles of colour management in computer-assisted preparation of knitted fabric/knitwear collections; computer-assisted knitting yarn design.

■ **Computer systems in apparel manufacturing** (4 ECTS): CAD/CAM systems in the clothing industry; lay planning and marker making; producing technical support documentation; management of material flow and cost calculations; computer-assisted cutting; 3D visualisation of products.

■ **Computer-assisted design for printing** (4 ECTS): preparing patterns; print form production procedure; pattern reproduction procedures; picture digitalisation and saving graphic files; basics of colour management; colour reduction;

repeat sketch; colour separation; vector and raster pictures; simulation of textiles and special effects.

■ **Production planning and management** (6 ECTS): organisational structures; production activities; business functions; organisation of the production function; preparing work; production; support activities; economising with the means of work.

■ **Entrepreneurship** (4 ECTS): developing entrepreneurship opportunities; creativity techniques; entrepreneurial approaches; business planning; market analysis; economics of a business idea; marketing planning; development and production (service) process planning; entrepreneurial grouping; critical risks.

■ **Quality management** (6 ECTS): systems of quality management; theoreticians of quality management; standards in quality management; evaluation and certification of quality systems; methods and techniques of quality management; quality economics; comprehensive quality management; self-evaluation and quality awards.