

UNIVERSITY OF LJUBLJANA
FACULTY OF NATURAL SCIENCES AND ENGINEERING
DEPARTMENT OF TEXTILES, GRAPHIC ARTS AND DESIGN

FIRST-LEVEL HIGHER EDUCATION STUDY PROGRAMME

**TEXTILE AND CLOTHING
ENGINEERING**

ACADEMIC YEAR 2024/25

INFORMATION ON TEXTILE AND CLOTHING ENGINEERING STUDY PROGRAMME

Basic information

Name of the programme	Textile and Clothing Engineering
Programme properties	
Programme type	Higher education professional study programme
Degree	First level
KLASIUS-SRV	Higher professional education (first Bologna cycle) (16203)
ISCED	Production technologies (54)
KLASIUS-P	Textile, clothing, footwear and leather technology (broad programmes) (5420)
KLASIUS-P-16	Textile, clothing, footwear and leather technology (unspecified) (5420)
Frascati	Technical sciences (2)
Level SOK	Level SOK 7
Level EOK	Level EOK 6
Level EOVK	First level
Fields/modules/courses	No subdivision (study programme)
Member of the University of Ljubljana	Faculty of Natural Sciences and Engineering, Aškerčeva cesta 12, 1000 Ljubljana, Slovenia
Duration (years)	3
Number of KT per year	60
Ways of conducting studies	Full-time

Basic goals of the programme

The European and, with it, the Slovenian textile and clothing industry is facing significant development challenges at the time of complete liberalisation of trade in textile products. Its future position will depend on the measures that will increase its competitive advantage. It will have to invest more in research and development, encourage innovation and lead an appropriate HR policy. In the Slovenian textile and clothing industry, the situation is particularly pressing due to the complete collapse of secondary education in the profession, first in the primary textile industry and now also in the clothing industry.

Analyses conducted within the EU show that the textile industry has a future even in developed economies, of course under certain conditions. The future can only be built by abandoning mass products, replacing them with textile and clothing products with high added value, high quality, superior design, creative products of the future, technical products, medical textiles, intelligent textiles etc.

In addition to other measures, the goals are closely related to the relevant knowledge and superior training of professional staff who have the skills and abilities to design, engineer and manufacture innovative products that will satisfy the demands and needs of the most demanding customers. The ultimate goal of such orientation is to produce products that will exceed customer requirements in every way and predict their future needs and requirements.

The main goal of the higher education professional programme Textile and Clothing Engineering is to train an expert who will be able to manage the technologically demanding processes of making yarn, fabrics, knits and knitwear, fibres, clothes and other ready-made products, as well as the processes of bleaching, dyeing, textile printing and a wide range of other finishing processes.

In accordance with the principles of the Bologna process, the programme represents a departure from the philosophy of teaching with an otherwise correct arrangement of various technologies applied to selected natural sciences contents. The default learning philosophy is such that in addition to the acquired knowledge, other competences of graduates, their skills and abilities are important as well, in this case with a focus on practical orientation. Due to the rapid development of technological processes in the field of textile and clothing technology, graduates acquire broad basic theoretical and professional knowledge and understanding associated with the awareness and ability of continuous additional education.

General competences (learning outcomes)

- broad professional knowledge in the field of study, complemented by selected knowledge in the fields of natural sciences, management, information and communication technology, aesthetics and textile design;
- ability to understand and theoretically substantiate professional topics;
- developed practical skills and ability to immediately accept practical tasks;
- ability to identify concrete and abstract practical problems, their theoretical analysis, find solutions and take appropriate action;
- developed ability to learn independently in the professional field;
- ability to participate in development and research work and transfer development and research achievements into practice;
- ability to understand the interdependence between technology and design, ability to understand artistic writing and its technological translation into textiles and clothing;
- ability to communicate with colleagues and experts of related disciplines, which enables active participation in group work, also in the field of projects based on the integration of professional legalities with design practice;
- developed professional ethical and environmental responsibility;
- ability to use modern tools, skills and abilities, especially in the field of ICT in everyday professional work.

Subject-specific competences (learning outcomes)

- ability to combine skills from the field of textile raw materials, mechanical and chemical textile technology into a designed product;
- ability to understand the interdependence between technology and design;
- readiness and competence for creative cooperation with designers in technologically innovative projects;
- knowledge of basic forms of clothing from prehistoric times to the present day, understanding of the connection between clothing and cultural development and the design styles of painting, sculpture, architecture, design; ability to recognise the harmony between function and form, construction and proportions of the human body and clothing; ability to read sketches and draw basic clothing, details and fashion accessories;
- knowledge and understanding of the basics of the scientific theory of fibres, knowledge of the properties of fibres and the ability to explain them with the general laws of physics and chemistry of materials;
- understanding of the influence of different technological phases on the properties of spun yarns, fabrics, knits, knitwear and fibres;

- ability to connect knowledge from different fields (construction, modelling, aesthetics, materials) and applications based on the definition of the purpose of the garment;
- ability to optimise the technological processes of clothing production and achieve a higher quality of finished products;
- knowledge of the theoretical basics of finishing, which are the basis for professional work in the fields of dyeing, printing, finishing and care of textiles;
- ability to use equations to determine the parameters of coloured surfaces and colour differences between the reference and investigated coloured surface;
- knowledge of the technological procedures of preparatory work, dyeing, finishing, textile printing and textile care;
- ecological awareness in the implementation of textile care processes in terms of minimising the pollution of wastewater from laundries and drycleaners;
- knowledge of computer programs for computer-aided sampling of fabrics, knits and knitwear;
- mastering of the process of developing clothing pattern cuts (construction of clothing patterns);
- ability to monitor, analyse and manage work processes in a textile and clothing company;
- ability to plan work processes in a textile and clothing company using network planning methods;
- ability to perceive and evaluate costs incurred in the work process;
- ability to understand the role of marketing in the process of creating high added value textile and clothing collections;
- understanding of the necessity of transformation of companies in accordance with the developing information culture, thus gaining a competitive advantage of the company;
- ability to understand modern concepts of quality management systems and the concept of quality;
- ability to functionally use the techniques of interpersonal communication, negotiation, teamwork, leadership and creative thinking;
- mastering of the methodology of preparing a business plan;
- knowledge of the structure, content and possibilities of using bibliographic and factual databases for the contents of the study field.

Enrolment conditions

Enrolment in the programme shall be possible for any person who has successfully passed the final examination in any four-year secondary school programme, vocational matura or general matura exam.

Criteria for selection in case of limited enrolment

If the number of candidates applying for the programme exceeds the number of available enrolment places, candidates shall be selected according to the following criteria:

- overall performance at the final examination, vocational matura or general matura exam (60%);
- overall performance in the 3rd and 4th years of secondary school (40%).

Criteria for recognition of knowledge and skills acquired before enrolment in the programme

A student can be credited for knowledge that corresponds in contents to the learning contents of the courses in the Textile and Clothing Engineering study programme acquired in various forms of education. The department Study Committee decides on the recognition of knowledge and skills acquired before the

enrolment, based on the student's written application, attached certificates and other documents proving the successfully acquired knowledge and the contents of these skills.

When crediting knowledge acquired before the enrolment, the department Study Committee will take into account the following criteria:

- whether conditions for enrolling into a specific educational programme are adequate (required prior education for starting the study programme);
- whether the scope of the completed educational programme (the number of hours of prior education as compared to the scope of the course in question) adequately compares with the credited requirements;
- whether the areas covered by the prior education programme, which the applicant would like to have credited, are comparable to the courses dealt with in the faculty study programme.

The acquired knowledge and skills may be credited as a completed study activity if the conditions for taking part in the educational programme were at least finished secondary school education, if the prior educational programme encompassed at least 75% of the scope of the course and if at least 75% of its contents cover the same areas as the course the applicant would like to have credited. If the Committee finds that the acquired knowledge can be credited, it is granted the same number of ECTS points as awarded at the faculty for the course in question.

A specific case of crediting skills and knowledge obtained prior to the enrolment is the crediting of Practical training if the student was full-time employed for at least one year at a company in graphic arts activities or similar. In this case, the employment must be proved with an appropriate document demonstrating the duration of the employment and the company's activities.

Assessment methods

Assessment methods are in accordance with the Statute of the University of Ljubljana and are specified in the curricula.

Student obligations

To enrol in the higher year, a student must have confirmed attendance in all courses, complete all practical classes and obtain the following number of ECTS credit points for enrolment in each individual year:

- minimum of 54 ECTS credit points for enrolment in the 2nd year;
- 60 ECTS credit points from the 1st year and minimum of 54 ECTS credit points from the 2nd year for enrolment in the 3rd year.

The department Study Committee may exceptionally grant progression to a higher year for a student who has achieved at least 42 ECTS credit points in the previous year if there are justified reasons for exception. Justified reasons are listed in the Statute of the University of Ljubljana.

To re-enrol in the same year of the study (repetition of the same year), students must have:

- all practical classes completed and minimum of 28 ECTS credit points for the 1st year;
- all practical classes completed and minimum of 28 ECTS credit points for the 2nd year.

During the course of studies, a student can repeat a class once or change the study programme once for having failed to meet their obligations in the former study programme.

Transfer between programmes

Transfer is possible between two study programmes:

- which ensure the acquisition of comparable competences or learning outcomes at the end of the studies;
- among which, according to the criteria for the recognition of knowledge and skills acquired before the enrolment in the first-level higher education professional study programme Textile and Clothing Engineering, at least half of the obligations under the European Transferable Credit System (ECTS) can be recognised from the first study programme, referring to compulsory courses from the higher education professional study programme Textile and Clothing Engineering.

An individual exam passed in the original study programme is recognised as passed in the first-level higher education study programme Textile and Clothing Engineering if the contents of the two courses are at least 75% compatible. The recognised exam is evaluated with credit points in the original study programme, not exceeding the earmarked credit points in the first-level higher education professional study programme Textile and Clothing Engineering.

A candidate can enrol into the 2nd or 3rd year of the first-level higher education study programme Graphic and Media Technology through transfer if:

- they meet the conditions for enrolment in the study programme,
- vacant places are available.

The department Study Committee determines for each candidate separately the extent to which it recognises the already completed study obligations, determines other obligations and decides which year the candidate can transfer to.

Requirements for completing studies

In order to complete the studies, students must meet all requirements in all courses they have enrolled in and prepare and defend their thesis.

Requirements for completing individual parts of the programme, if contained in the programme

The programme does not contain individual parts of the programme.

Professional or scientific or artistic title (and abbreviation)

Bachelor of Applied Science (B.A.Sc.)

STUDY PROGRAMME CURRICULUM TEXTILE AND CLOTHING ENGINEERING

Year 1, Compulsory

1st semester

				Contact hours								
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Elective
1.	0068390	Information technologies	Stanislav Praček	30	0	30	0	0	60	120	4	no
2.	0068408	Introduction to Textile and Fashion design	Almira Sadar, Marija Jenko	30	30	0	0	0	60	120	4	no
3.	0068396	Development of clothing patterns	Živa Zupin	30	15	15	0	0	60	120	4	no
4.	0068398	Textile raw materials	Marija Gorjanc	30	30	15	0	15	90	180	6	no
5.	0089530	Yarns	Dunja Šajn Gorjanc	30	30	30	0	0	90	180	6	no
6.	0068389	Physical-mechanical properties of textiles and clothing	Matejka Bizjak	30	30	30	0	0	90	180	6	no
Total				180	135	120	0	15	450	900	30	

2nd semester

				Contact hours								
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Elective
1.	0068393	Basics of finishing	Barbara Simončič	45	45	0	0	0	90	180	6	no
2.	0068397	English for Specific Purposes	Barbara Luštek Preskar, prof. angl. in nem.	0	60	0	0	0	60	120	4	no
3.	0068399	Woven fabrics	Matejka Bizjak	30	15	45	0	0	90	180	6	no
4.	0068394	Knitted fabrics and knitwear	Alenka Pavko Čuden	30	30	30	0	0	90	180	6	no

5.	0068391	Nonwovens	Dunja Šajn Gorjanc	30	0	30	0	0	60	120	4	no
6.	0643010	Technological design of textiles and clothing	Alenka Pavko Čuden	30	30				60	120	4	no
Total				165	180	105	0	0	450	900	30	

Year 2, Compulsory

1st semester

				Contact hours								
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Elective
1.	0068405	Statistical Methods in Textile	Stanislav Praček	30	0	30	0	0	60	120	4	no
2.	0068388	Aesthetics of Textiles and Clothing	Karin Košak	30	30	0	0	0	60	120	4	no
3.	0068404	Production planning and management	Andrej Demšar	30	30	0	0	0	60	120	4	no
4.	0068401	Bleaching and finishing	Barbara Simončič, Petra Forte Tavčar	60	15	15	0	0	90	180	6	no
5.	0068400	Dyeing	Marija Gorjanc	30	15	45	0	0	90	180	6	no
6.	0068407	Basic methods in textile testing	Andrej Demšar	30	30	30	0	0	90	180	6	no
Total				210	120	120	0	0	450	900	30	

2nd semester

				Contact hours								
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Elective
1.	0565012	Technical textiles and composites	Dunja Šajn Gorjanc, Tatjana Rijavec	45	30	15	0	0	90	180	6	no
2.	0068402	Apparel manufacturing	Matejka Bizjak	30	30	30	0	0	90	180	6	no

3.	0068406	Textile printing	Petra Forte Tavčar	30	15	45	0	0	90	180	6	no
4.	0099737	Textile care 1	Barbara Simončič, Brigita Tomšič	30	15	15			60	120	4	no
5.	0565032	Planning textiles and comfortableness of clothing	Tatjana Rijavec	15	15	30			60	120	4	no
6.	0099739	Ecology in textile	Petra Eva Forte Tavčer	30	15	15			60	120	4	no
Total				180	120	150	0	0	450	900	30	

Year 3, Compulsory

1st semester

				Contact hours								
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Elective
1.	0099786	Practical training	Mirjam Leskovšek						600	600	20	no
2.	0111844	Diploma work		0	0	0		150	150	300	10	no
Total				0	0	0	0	150	750	900	30	

2nd semester

				Contact hours								
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Elective
1.	0111837	Optional subject 1		30	0	30	0	0	60	120	4	no
2.	0111839	Optional subject 2		30	15	15	0	0	60	120	4	no
3.	0111840	Optional subject 3		45	15	0	0	0	60	120	4	no
4.	0111841	Optional subject 4		30	0	30			60	120	4	no
5.	0111842	Optional course 5		30	15	15			60	120	4	no
6.	0111843	Optional subject 6		45	15	0			60	120	4	no
7.	0643011	Project work			30	45		15	90	180	6	no
Total				210	90	135	0	15	450	900	30	

Year 3, Elective

2nd semester

	University Course Code	Course title	Lecturers	Contact hours					Individual student work	Total hours	ECTS	Elective
				Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study				
1.	0068094	Computer-assisted design of yarns and woven fabrics	Živa Zupin	30	0	30	0	0	60	120	4	yes
2.	0068093	Computer-assisted design of knitted fabrics and knitwear	Živa Zupin	30	0	30	0	0	60	120	4	yes
3.	0068092	Computer systems in apparel manufacturing	Živa Zupin	30	0	30	0	0	60	120	4	yes
4.	0068095	Computer-assisted design for printing	Marija Gorjanc	15	30	15	0	0	60	120	4	yes
5.	0078173	Marketing of textiles and clothing	Mateja Kos Koklič	45	15	0	0	0	60	120	4	yes
6.	0068061	Entrepreneurship	Blaž Zupan	30	0	30	0	0	60	120	4	yes
7.	0068098	Quality management	Andrej Demšar	30	30	0	0	0	60	120	4	yes
8.	0068373	Textile and clothing tradition	Alenka Pavko Čuden	45	15	0	0	0	60	120	4	yes
9.	0068097	Leather and fur	Marija Gorjanc	15	30	0	0	15	60	120	4	yes
10.	0068372	Interior textiles	Alenka Pavko Čuden, Živa Zupin	30	30	0	0	0	60	120	4	yes
11.	0068371	Styling Consulting	Nataša Peršuh	30	30	0	0	0	60	120	4	yes
12.	0643012	Special clothing patterns	Živa Zupin	45	15				60	120	4	yes
13.	0643014	Basics of colour measurement	Sabina Bračko	30	15	15			60	120	4	yes
14.	0642834	Medical textiles	Brigita Tomšič	30	30				60	120	4	yes
15.	0643013	Digital in Design	Karin Košak, Tanja Nuša Kočevar	30	30				60	120	4	yes

16.	0643493	HOLISTIC THINKING AND ACTING	Andrej Demšar	30	30				60	120	4	yes
17.	0643494	BUSINESS COMMUNICATION	Andreja Jaklič	30	30				60	120	4	yes
18.	0643495	Project work		15	30			15	60	120	4	yes
19.	0643981	Information competences	Danica Dolničar	30	15	15	0	0	60	120	4	yes
Total				570	375	165	0	30	1140	2280	76	