

UNIVERSITY OF LJUBLJANA
FACULTY OF NATURAL SCIENCES AND ENGINEERING

DEPARTMENT OF TEXTILES, GRAPHIC ARTS AND DESIGN
Chair of Textile and Clothing Engineering

MASTER'S DEGREE STUDY PROGRAMME

PLANNING TEXTILES AND CLOTHING

ACADEMIC YEAR 2024/25

Basic information

Name of programme	PLANNING TEXTILES AND CLOTHING
Programme properties	
Type of study	Master's degree study programme
The degree of study	Postgraduate study programme
Title:	Master of Science (M.Sc.)
KLASIUS-SRV	(17003) Master's education (second Bologna cycle)
ISCED	(54) Manufacturing and processing
KLASIUS-P	(5420) Textiles, clothes, footwear, leather (broad programmes)
KLASIUS-P-16	(0723) Textiles (clothes, footwear and leather)
Frascati	(2) Engineering and technology
Level SOK	Level SOK 8
Level EOK	Level EOK 7
Level EOVK	Second degree postgraduate study programme
Areas/modules/field of study	No subdivision (study programme)
Member of the University of Ljubljana	Faculty of Natural Sciences and Engineering, Aškerčeva cesta 12, 1000 Ljubljana, Slovenia
Duration (years)	2
ECTS points per year	60
Mode of study	Full-time and part-time

Basic goals of the programme

The European and thus also 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 implement an appropriate personnel policy. In the Slovenian textile and clothing industry, the personnel situation is particularly urgent due to the complete collapse of the secondary education in this profession, first in the primary textile industry and now also in the clothing industry.

The analyses conducted in the EU show that the textile industry has a future even in developed economies, of course under certain conditions. This future can only be shaped by abandoning mass-produced products, replacing them with textile and clothing products with high added value, high quality, sophisticated design, creative future products, technical products, medical textiles, smart textiles etc.

The objectives are among others closely related to the relevant knowledge and world-class training of professionals who have the knowledge and skills to design, engineer and manufacture innovative products that meet the demands and needs of the most demanding customers. The ultimate goal of such an orientation is to manufacture products that exceed customer requirements in every respect and predict their future needs and demands.

The basic goal of the postgraduate programme Planning Textiles and Clothing is to expand the knowledge of graduates in the university study programme from the field of textiles and clothing, train students in finding new sources of knowledge through scientific research methods and manage the most complex working systems. The programme is intended to stimulate the development of critical reflection and communication capacity for teamwork management. A programme characteristic is that it aggregates students in project-oriented work and engages them in applied and basic research tasks, preparing them for further education at the third, doctoral level.

In accordance with the principles of the Bologna process, the programme, compared to the previous ones, implies a deviation from the educational philosophy of proper integration of various technologies grounded on selected natural science contents. The default learning philosophy is such that in addition to the acquired knowledge, other student competences are equally important as well, including their skills and dexterity, in this case by promoting a research approach to rapidly developing technologies in the field of primary textile and clothing activities.

General competences (learning outcomes)

- in-depth knowledge gained by the study of theoretical and methodological concepts connected with gaining capacity to seek new sources of knowledge through scientific research methods;
- developed critical reflection;

- ability to experiment and handle various concepts;
- developed capacity for independent learning in the professional and scientific field;
- initiative and independence in decision making and management of the most demanding work;
- ability to communicate with colleagues and experts in related disciplines, which facilitates active cooperation in teamwork and in the area of projects based on linking professional principles from various fields;
- ability to respond quickly to new information and plan a product with new or improved properties;
- developed professional, ethical and environmental responsibility;
- ability to use modern tools, skills and dexterity, primarily in the field of ICT in daily professional and scientific research work.

Subject-specific competences

- in-depth knowledge of mathematics, engineering mechanics, organic and physical chemistry with developed science thinking ability;
- in-depth review of high performance fibres, their structure in different structural levels (nano, microfibrillar, macrofibrillar), morphology and performance; use of high-performance fibres for high-technologies (high-tech) in medicine, pharmacy, biomedicine, biotechnology, optics, electronics, transport technology, IT, nuclear energy; fibres with specially modified properties of standard fibres which allow specific sensual comfort (high-touch) during use;
- understanding of scientific methods, critical analysis and synthesis and their use in solving concrete problems, i.e. analysis, development and production of progressive products with enhanced properties and high added value (yarn, non-woven, woven and knitted textiles); planning, analysis and execution of progressive mechanical textile processes;
- capacity of linking various knowledge from the fields of constructional, mechanical, physical and chemical properties of textiles with finishing processes aimed at the technological design of multi-functional textiles with high added value;
- understanding of the difference between innovation management and management of routine operation;
- in-depth theoretical learning of the integral process of planning textiles with regard to design and functional guidelines;
- in-depth knowledge of the effect of climatic conditions, thermo-physical and sensory human responses in planning clothing for various intended uses;
- knowledge of innovations in modern textiles, especially intelligent textiles and textiles for special comfort based on a multi-functional and interdisciplinary approach;
- knowledge of state-of-the-art and special processes of the physical and chemical modification of fibre-forming polymers.

Enrolment conditions and criteria in case of limited enrolment

Candidates can enrol in the master's degree study programme if they have finished:

- a) at least first-level study programme evaluated with minimum 180 ECTS credit points from the professional fields of: textiles, clothes, footwear, leather; fashion design; fashion, interior and industrial design; audio-visual techniques and media production; engineering and engineering trades, or an equivalent study programme completed under current regulations in the Republic of Slovenia or abroad;
- b) at least first-level study programme evaluated with minimum 180 ECTS credit points from other professional fields, or an equivalent study programme completed under current regulations in the Republic of Slovenia or abroad if the candidates have completed prior to the enrolment all study obligations from the following fields: Mathematics 1 (6 ECTS credit points), Mathematics 2 (6 ECTS credit points), Physics 1 (6 ECTS credit points), Physics 2 (6 ECTS credit points), Chemistry 1 (6 ECTS credit points), Chemistry 2 (6 ECTS credit points) and Fibre (8 ECTS credit points) as specified in the undergraduate study programme Planning Textiles and Clothing essential for continuing their studies. These obligations are determined by the department Study Committee and comprise from 10 to up to 60 ECTS credit points.

If the number of candidates applying for the programme exceeds the number of enrolment places, candidates referred to in point (a) shall be short-listed on the basis of the number of points obtained in the first-level study programme or in a higher education or university study programme prior to the introduction of the Bologna declaration.

The candidates referred to in point (b) shall be short-listed according to:

- the number of points achieved in the first-level study programme (75% of points), and
- the number of points achieved in performing additional study obligations (25% of points).

Points are calculated by multiplying the average grade of studies or additional study obligations from point (b) rounded to one decimal place by 10 (maximum 100 points).

Criteria for crediting knowledge and skills obtained before enrolment

The Faculty of Natural Sciences and Engineering may choose to credit student's knowledge (obtained in the framework of different kinds of education) if it corresponds to the course contents of the Planning Textiles and Clothing master's degree study programme. The department Study Committee is in charge of recognising knowledge and skills obtained before the enrolment, which is done on the basis of student's written application and provided certificates or other documents proving the type of knowledge successfully acquired.

When recognising knowledge obtained before the enrolment, the Study Committee will take into account the following criteria:

- whether conditions for enrolling into a specific educational course are adequate (required prior education for starting the study programme);
- whether the scope of the completed educational course (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, adequately compare with 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 the same as for enrolling into the master's degree study programme Planning Textiles and Clothing, 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 establishes that the acquired knowledge can be credited, the same number of ECTS credit points is granted as awarded for the course in question.

Assessment methods

Assessment methods are in accordance with the [Statute](#) of the University of Ljubljana and are specified in the curricula.

Progression through the programme

Conditions for enrolment in the higher year

To enrol in the higher year, student must obtain a minimum of 54 ECTS credit points. The department Study Committee may exceptionally grant enrolment in the higher year to a student who has obtained at least 42 ECTS credit points in the previous year if there are justified reasons. Justified reasons are specified in the Statute of the University of Ljubljana.

Conditions to repeat a year (re-enrol in the same year)

In order to repeat the 1st year, students must have a minimum of 30 ECTS credit points. During the course of studies, a student may repeat a year once or transfer to another study programme once for having failed to meet their obligations in the previous study programme.

Conditions for transfer between study programmes

Transfer is possible between two study programmes:

1. which ensure the acquisition of comparable competences or learning outcomes at the end of the study programme;
2. in which, according to the criteria for recognition of knowledge and skills acquired prior to enrolment in the study programme, at least half of the obligations under the European Credit Transfer and Accumulation System (ECTS) from the first study programme can be recognised, referring to compulsory courses of the second study programme; i.e. master's degree study programme Planning Textiles and Clothing.

An individual examination passed in the first study programme is recognised as passed in the second, master's degree, study programme Planning Textiles and Clothing, if the contents of the two programmes are at least 75% compatible. The examination is recognised with the number of ECTS credit points in the original study programme; however, not with more ECTS credit points than evaluated in the master's degree study programme Planning Textiles and Clothing.

Candidates may enrol in the final year with transfer if:

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

The department Study Committee determines for each candidate the extent to which it recognises previously completed study obligations, determines new obligations and defines the year the candidate can transfer to.

Completion of studies

To complete the studies, students must meet all obligations in all enrolled courses, prepare a master's thesis and defend it.

Title

Master of Science (M.Sc.)

Employment possibilities

With their acquired knowledge, graduates of the master's degree study programme Planning Textiles and Clothing can be employed in the leading positions in textile and clothing industries, consultant companies and agencies, in educational institutions engaged in textile and clothing activities, in trade and government administration.

STUDY PROGRAMME CURRICULUM

PLANNING TEXTILES AND CLOTHING

Version (valid since): 2023-3 (01. 10. 2023)

Name of study programme	Planning textiles and clothing
Programme characteristics	
Type	master's
Cycle	master
University of Ljubljana members	Faculty of Natural Sciences and Engineering, Aškerčeva cesta 12, 1000 Ljubljana, Slovenija

Ni členitve (study programme)

Year 1

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.	0068971	High performance fibres	Tatjana Rijavec	60	15	15	0	0	90	180	6	no
2.	0068969	Advanced mechanical textile technologies	Alenka Pavko Čuden, Dunja Šajn Gorjanc, Matejka Bizjak	30	30	30	0	0	90	180	6	no
3.	0068970	Advanced finishing processes	Barbara Simončič, Brigita Tomšič, Marija Gorjanc, Mateja Kert, Petra Eva Forte Tavčer	30	30	30	0	0	90	180	6	no
4.	0111958	Basic elective course 1		45	0	45	0	0	90	180	6	yes
5.	0111959	Basic elective course 2		45	15	30	0	0	90	180	6	yes
Total				210	90	150	0	0	450	900	30	

2nd semester

	Contact hours	
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	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Elective
1.	0068968	Mechanical functionalisation of textiles	Alenka Pavko Čuden, Dunja Šajn Gorjanc, Matejka Bizjak	30	30	30	0	0	90	180	6	no
2.	0068967	Chemical functionalisation of textiles	Barbara Simončič, Brigita Tomšič, Marija Gorjanc, Mateja Kert, Petra Eva Forte Tavčer	30	30	30	0	0	90	180	6	no
3.	0068975	Research seminar	Barbara Simončič, Lekt. mag. Barbara Luštek Preskar, prof. angl. in nem.	30	60	0	0	0	90	180	6	no
4.	0109006	Composites	Brigita Tomšič, Marija Gorjanc, Matejka Bizjak, Tatjana Rijavec	30	30	30	0	0	90	180	6	no
5.	0068965	Technical textiles	Alenka Pavko Čuden, Brigita Tomšič, Dunja Šajn Gorjanc, Matejka Bizjak	30	30	30	0	0	90	180	6	no
Total				150	180	120	0	0	450	900	30	

Year 1, Temeljni izbirni predmet 1 in 2

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.	0068976	Mathematics	Janko Bračič	45	0	45	0	0	90	180	6	yes
2.	0068977	Organic chemistry	Janez Cerkovnik	45	15	30	0	0	90	180	6	yes
3.	0068978	Data management	Bojana Boh Podgornik	30	15	45	0	0	90	180	6	yes
Total				120	30	120	0	0	270	540	18	

Year 2

1st semester

	Contact hours	
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	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Elective
1.	0068973	Sustainable development of textiles	Petra Eva Forte Tavčer	30	30	0	0	30	90	180	6	no
2.	0068974	Advanced analytical methods	Andrej Demšar, Diana Gregor Svetec	30	30	30	0	0	90	180	6	no
3.	0068966	Functionalisation of ready-made products	Matejka Bizjak , Tatjana Rijavec	30	30	30	0	0	90	180	6	no
4.	0111963	Elective course 1		30	0	30	0	0	60	120	4	yes
5.	0111964	Elective course 2		0	30	30	0	0	60	120	4	yes
6.	0111965	Elective course 3		30	30	0	0	0	60	120	4	yes
		Total		150	150	120	0	30	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.	0068972	Masters thesis						450	450	900	30	no
		Total		0	0	0	0	450	450	900	30	

Year 2, Izbirni predmet 1, 2, 3

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.	0068958	Quality Engineering	Andrej Demšar	30	30	0	0	0	60	120	4	yes
2.	0109008	Biotechnology for textile processing	Petra Eva Forte Tavčer	30	30	0	0	0	60	120	4	yes
3.	0068959	Contemporary fashion and textile practices	Almira Sadar, Elena Fajt, Katja Burger Kovič, Marija Jenko, Nataša Peršuh	30	15	0	0	15	60	120	4	yes
4.	0068962	Digital textile printing	Petra Eva Forte Tavčer	30	0	30	0	0	60	120	4	yes

5.	0642811	Textiles for protection	Barbara Simončič, Brigita Tomšič	0	30	30	0	0	60	120	4	yes
6.	0642812	Eco-finishing	Marija Gorjanc	0	30	30	0	0	60	120	4	yes
7.	0642813	Special woven fabrics	Matejka Bizjak	0	30	30	0	0	60	120	4	yes
8.	0642814	Special knitted fabrics and knitwear	Alenka Pavko Čuden	0	30	30	0	0	60	120	4	yes
9.	0642815	Elective course	Živa Zupin	0	30	30	0	0	60	120	4	yes
10.	0642816	Smart textiles	Tatjana Rijavec	30	0	30	0	0	60	120	4	yes
11.	0642817	Typology of colours	Sabina Bračko	0	30	30	0	0	60	120	4	yes
		Total		150	255	240	0	15	660	1320	44	