

# Bachelor's degree in Textile Technology and Design Engineering

On the **bachelor's degree in Textile Technology and Design Engineering** you will build on the common industrial engineering component and come to understand the fundamentals of textile materials and processes, the integral development of textile products and industrial garment making, linear textile structures and non-woven fabrics (technical and smart fabrics), processing and finishing operations, biopolymers, and global textile business logistics and management. When you complete it, you will be capable of understanding, selecting and using textile products and materials, including technical and smart fabrics; designing, optimising and developing technologies related to textile products and processes; and supervising and managing textile companies.

## GENERAL DETAILS

### Duration

4 years

### Study load

240 ECTS credits (including the bachelor's thesis). One credit is equivalent to a study load of 25-30 hours.

### Delivery

Face-to-face

### Language of instruction

Check the language of instruction for each subject (and timetable) in the course guide in the curriculum.

Information on [language use in the classroom and students' language rights](#).

### Fees and grants

Approximate fees per academic year: €1,107 (€2,553 for non-EU residents). [Consult the public fees system based on income \(grants and payment options\)](#).

### Location

[Terrassa School of Industrial, Aerospace and Audiovisual Engineering \(ESEIAAT\)](#)

### Official degree

[Recorded in the Ministry of Education's degree register](#)

## ADMISSION

### Places

270

### Registration and enrolment

[What are the requirements to enrol in a bachelor's degree course?](#)

### Legalisation of foreign documents

All documents issued in non-EU countries must be [legalised and bear the corresponding apostille](#).

## DOUBLE-DEGREE AGREEMENTS

### Double-degree pathways at the UPC

You have the possibility of complementing this bachelor's degree with a specific pathway towards a double degree by taking an additional number of credits from one of the other degrees taught at the School. Generally, this involves an additional year

of study. To gain admission to a double degree of this kind you must have taken a minimum number of credits on one of the bachelor's degrees. The number of places is limited.

- Bachelor's degree in Textile Technology and Design Engineering / Bachelor's degree in Mechanical Engineering
- Bachelor's degree in Textile Technology and Design Engineering / Bachelor's degree in Industrial Design and Product Development Engineering
- Bachelor's degree in Textile Technology and Design Engineering / Bachelor's degree in Chemical Engineering

#### **With other universities or centers of higher education in Catalonia**

- Bachelor's degree in Textile Technology and Design Engineering / Master's degree in Industrial Engineering / Degree in Business Administration and Management (UOC).

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### **PROFESSIONAL OPPORTUNITIES**

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#### **Professional opportunities**

- Design; management; commercial organisation and management of textile companies that develop their own technology and basic manufacturing companies; sales and logistics companies; and research centres.
- Design, implementation, operation and management of textile products, processes and facilities. Product development and production and quality management.
- Execution and management of industrial projects, consulting and services.
- International trade.
- Environment protection.
- Teaching and research.

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### **ORGANISATION: ACADEMIC CALENDAR AND REGULATIONS**

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#### **Academic calendar**

[General academic calendar for bachelor's, master's and doctoral degrees courses](#)

#### **Academic regulations**

[Academic regulations for bachelor's degree courses at the UPC](#)

#### **Language certification and credit recognition**

Queries about [language courses and certification](#)

Terrassa School of Industrial, Aerospace and Audiovisual Engineering (ESEIAAT)

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### **CURRICULUM**

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<b>Subjects</b>	<b>ECTS credits</b>	<b>Type</b>
<b>FIRST SEMESTER</b>		
Chemistry	6	Compulsory
Environmental Technologies and Sustainability	6	Compulsory
Graphic Expression in Engineering	6	Compulsory
Mathematical Methods I	6	Compulsory
Physics I	6	Compulsory
<b>SECOND SEMESTER</b>		
Economics and Business Administration	6	Compulsory
Foundations of Computing	6	Compulsory
Materials Science and Technology	6	Compulsory

<b>Subjects</b>	<b>ECTS credits</b>	<b>Type</b>
Mathematical Methods II	6	Compulsory
Physics II	6	Compulsory
<b>THIRD SEMESTER</b>		
Electric Systems	6	Compulsory
Fluid Mechanics	6	Compulsory
Mathematical Methods III	6	Compulsory
Mechanical Systems	6	Compulsory
Production Organisation	6	Compulsory
<b>FOURTH SEMESTER</b>		
Control and Guidance of Mobile Robots	6	Optional
Electronic Systems	6	Compulsory
Industrial Automation and Control	6	Compulsory
Materials for Textile Design	6	Compulsory
Planning, Simulation and Supervision of Industrial Processes	6	Optional
Probability and Statistics	6	Compulsory
Thermal Engineering	6	Compulsory
Uav Research & Development	3	Optional
Uav Research & Development Project	3	Optional
<b>FIFTH SEMESTER</b>		
Colouring Agents and Auxiliary Materials	6	Compulsory
Design of Bleaching and Dyeing Processes. Colorimetry	6	Compulsory
Design of Knitted Laminar Structures	6	Compulsory
Design of Linear and Nonwoven Laminar Structures	6	Compulsory
Design Of Woven Laminar Structures	6	Compulsory
<b>SIXTH SEMESTER</b>		
Advanced Programming Oriented Towards Goals	3	Optional
Air Pollution and Treatment Technologies	6	Optional
Autonomous Vehicle Programming	3	Optional
Big Data Tools and Applications	3	Optional
Characterization Techniques for Metallic Alloys	3	Optional
Creative Lab	6	Optional
Creative Programming with Processing	3	Optional
Critical Thinking for 3D Printing	6	Optional
Decision Criteria - Engineer as Employee or Engineer as Entrepreneur	3	Optional
Design of Dyeing, Printing and Coating Processes	6	Compulsory
Electromobility and Electrical Aircraft Systems	3	Optional
Energy Efficiency Systems	3	Optional
Energy Storage and Conversion Application	3	Optional

<b>Subjects</b>	<b>ECTS credits</b>	<b>Type</b>
Experimental Design	3	Optional
Finishing Processes	6	Compulsory
Fundamentals of Robotics	3	Optional
Highly Automated Production Systems	3	Optional
Hospital Engineering	6	Optional
Information and Communication Technology	3	Optional
Integral Development of Textile Products	6	Compulsory
Introduction to Big Data	3	Optional
Introduction to Dynamical Systems and Ergodic Theory	3	Optional
Introduction to Forensic Expert for Technique Dispute Resolution	3	Optional
Introduction to Object-Oriented Programming	3	Optional
Introduction to Reverse Engineering	3	Optional
Leadership and Professional Development in Engineering	3	Optional
Material Selection in Industrial Design	6	Optional
Mathematical Models in Engineering	3	Optional
Mathematics and Computing Engineering	3	Optional
Mobile Programming	6	Optional
Motorbikes Design and Secrets	3	Optional
Professional Communication for Engineers Through Virtual Reality	3	Optional
Real-Time Programming and Database Systems	3	Optional
Robotics and Automation	3	Optional
Safety Robotics and Automation for Industry 4.0	3	Optional
Surface Chemistry for Industrial Applications Design	3	Optional
Tailorability of Textile Structures	6	Compulsory
Technology, Society and Globalization: the Sustainability Challenge in the XXIth Century	6	Optional
Uav Generative Design	6	Optional
Validating and Communicating Innovative Ideas	6	Optional
Vibroacoustics	3	Optional
Web Applications	3	Optional
Written Academic Skills for Engineering	3	Optional
<b>SEVENTH SEMESTER</b>		
Advanced Programming	6	Optional
Fabric Quality Evaluation	6	Optional
Initiation to Paper and Graphic Industrial Technologies	6	Optional
Innovation Project Management	6	Compulsory
Internship	12	Optional
Jacquard Design	6	Optional
Modelisation, Complexity and Sustainability	6	Optional

<b>Subjects</b>	<b>ECTS credits</b>	<b>Type</b>
Polymers in Engineering	6	Optional
Programming of Mobiles Android	6	Optional
Project Oriented Methodology	6	Compulsory
Wastewater Treatment and Reuse	6	Optional
<b>EIGHTH SEMESTER</b>		
Agrivoltaics: Photovoltaic Solar Energy for Sustainable Development	3	Optional
Application of Python/Matlab/C++ to Thermal Engineering Mechanical and Aeronautical Problems	3	Optional
Applied Research Methods in Engineering Science	3	Optional
Basic Robotics	6	Optional
Digitalization Applied to Energy Systems	3	Optional
Electrical Project Design with Eplan	3	Optional
Fundamentals of Rams Engineering in the Certification of Aerospace Products	3	Optional
Hydraulic Hybrid Machines	3	Optional
Hydrogen's Future: Technologies and Applications	3	Optional
Introduction to Robotics and Automation	3	Optional
Life Cycle Assessment	3	Optional
Materials Chemistry	3	Optional
Numerical Methods for Engineers	6	Optional
Photonics. Optics Applied to Engineering	6	Optional
Professional Communication for Engineers Through Virtual Reality II	3	Optional
R&D in Engineering	3	Optional
Sports Engineering	3	Optional
Technological Projects I	6	Optional
Technological Projects II	6	Optional
Thermal Analysis Techniques Applied to Engineering Materials	3	Optional
UAV Introduction to Drone Flight (Uas)	3	Optional
Waste Management and Treatment	6	Optional
Bachelor's Thesis	24	Project