

# Postgraduate Certificate Textile Structures



## Postgraduate Certificate Textile Structures

- » Modality: **online**
- » Duration: **6 weeks**
- » Certificate: **TECH Technological University**
- » Dedication: **16h/week**
- » Schedule: **at your own pace**
- » Exams: **online**

Website: [www.techtute.com/in/engineering/postgraduate-certificate/textile-structures](http://www.techtute.com/in/engineering/postgraduate-certificate/textile-structures)

# Index

01

Introduction

---

*p. 4*

02

Objectives

---

*p. 8*

03

Course Management

---

*p. 12*

04

Structure and Content

---

*p. 16*

05

Methodology

---

*p. 20*

06

Certificate

---

*p. 28*

# 01

# Introduction

In a current context of growing demand for highly trained professionals in the field of Textile Engineering, the aeronautical industry presents an area in which textile structures play a fundamental role. The use of textile materials in the manufacture and maintenance of aircraft has become increasingly common due to their lightness, strength and durability. That is why this program responds to the current needs of the engineer, providing complete and up-to-date education in materials technology, production and manufacturing processes, design and maintenance of textile structures in the aeronautical industry. In addition, the program is developed in a 100% online format, allowing students to distribute the course load according to their needs and from any location.





“

*Textile Engineering is in constant advancement to provide and obtain the best results in the creation and exhibition of Textile Structures, qualify yourself in this area as the best of engineers"*

The Textile Engineering sector is constantly evolving and adapting to the needs of different industrial fields. In this aspect, the aeronautical industry presents an area in which textile structures have acquired great importance in recent years. The use of textile materials in the manufacture and maintenance of aircraft has become increasingly common due to their lightness, strength and durability. Specifically, textile materials are used in the construction of parts such as aircraft covers, seats and interiors. Textile materials are also useful in aircraft maintenance, as they are used to repair and reinforce damaged parts.

It is in this scenario that this TECH academic degree responds to the current needs of the engineer, offering multidisciplinary and cutting-edge education. The objective of this program is to provide the professional with the knowledge and skills necessary to work in companies dedicated to the design, manufacture and maintenance of aircraft. The program focuses on the study of textile materials and their application in the design and construction of aircraft, as well as their maintenance and repair. Topics such as occupational safety, industry standards and regulations, and technological innovation are also covered.

All this is delivered in a 100% online format, allowing the graduates to study in their free time and from anywhere. In addition, the program uses the Relearning, method, which consists of reiterating the fundamental concepts throughout the syllabus so that the student can integrate the knowledge in a natural and gradual way, without having to dedicate hours to memorization. This way, a complete and effective education is guaranteed, adapted to the current needs of the aeronautical sector.

This **Postgraduate Certificate in Textile Structures** contains the most complete and up-to-date program on the market. The most important features include:

- ◆ The development of case studies presented by experts in Textile Structures
- ◆ The graphic, schematic, and practical contents with which they are created, provide practical information on the disciplines that are essential for professional practice
- ◆ Practical exercises where self-assessment can be used to improve learning
- ◆ Its special emphasis on innovative methodologies
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ◆ Content that is accessible from any fixed or portable device with an Internet connection



*You will give a significant boost to your career by including this Postgraduate Certificate in your CV"*



“

*You will have all the materials available in different audiovisual formats from the first day and with the option of downloading them so that you can consult them whenever you need it”*

The program’s teaching staff includes professionals from sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide an immersion education programmed to learn in real situations.

The design of this program focuses on Problem-Based Learning, by means of which the professional must try to solve the different professional practice situations that are presented throughout the academic course. For this purpose, the student will be assisted by an innovative interactive video system created by renowned experts.

*Keep yourself up to date in the methods of obtaining mesh or knitted textile structures with this exclusive academic degree.*

*No unnecessary travel, preset schedules and mandatory attendance. Everything is an advantage for you with this TECH program.*



# 02 Objectives

The countless advances that have been made in the field of Textile Engineering have allowed the development of increasingly effective and customized industrial strategies based on technological advances in the sector. Therefore, the purpose of this program is none other than to make available to the engineers the latest and most comprehensive information related to innovations in the industrial sector of weaving or mesh technologies, allowing them to implement in their practice the most advanced tools for the development of their work in just 6 weeks of 100% online learning.







“

*Upgrade your professional skills in Textile Structures to improve your professional future. Now is always the best time”*



## General Objectives

---

- ◆ Classify the different types of fibers according to their nature
- ◆ Determine the main physical characteristics of textiles
- ◆ Acquire technical skills to recognize the quality of textiles
- ◆ Establish scientific and technical criteria for the selection of suitable materials for the development of textile articles in the fashion sector
- ◆ Identify and apply the sources of inspiration and the most innovative trends in the textile area
- ◆ Generate a transversal vision of textile structures with a multisectorial vision of its applications





## Specific Objectives

---

- ◆ Calculate and design textile structures related to the requirements of the textile industry
- ◆ Distinguish, apply and design processes according to the characteristics of different textile structures
- ◆ Be able to develop research and innovation in the field of textile structures
- ◆ Integrate knowledge to face the complexity of different textile structures
- ◆ Identify and analyze textile structures from a technical approach



*With the tools of this Postgraduate Certificate, you will be one step closer to professional excellence and perfect your knowledge as a Textile Engineer"*



# 03

# Course Management

For the conformation of the teaching staff of this Postgraduate Certificate, TECH has taken into consideration several fundamental aspects. Therefore, the academic curriculum of the candidates, their professional experience in the field of Textile Engineering and their quality of work through successful projects in which they have participated have been decisive in their selection. Thanks to this, it has been possible to develop a staff of the highest level, which has designed a unique and cutting-edge syllabus for the graduate during the 6 weeks of the course to deepen and improve in Textile Structures.





“

*Delve into the basic, mechanical and chemical properties from the hand of the best experts in the field, with years of experience in the design and manufacture of Textile Structures”*



## Management



### Dr. González López, Laura

- ♦ Textile Innovation Production Manager at Waste Prevention SL
- ♦ Pattern and garment maker oriented to the automotive sector
- ♦ Researcher in the Tectex group
- ♦ Lecturer in undergraduate and postgraduate university studies
- ♦ D. in Textile and Paper Engineering from the Polytechnic University of Catalonia
- ♦ Graduate in Political Science and Administration from the Autonomous University of Barcelona
- ♦ PROFESSIONAL MASTER'S DEGREE in Textile and Paper Engineering

## Professors

### Ms. Ruiz Caballero, Ainhoa

- ♦ Commercial team leader of technical textile products for extreme sports at McTrek Retail GmbH Aachen
- ♦ Technician specialized in textile products Hightech for high mountain at McTrek Outdoor Sports GmbH Aachen
- ♦ Degree in Political Science and Law from the Polytechnic University of Catalonia
- ♦ Master's Degree in European Union by the European Institute of Bilbao



# 04

## Structure and Content

This Postgraduate Course in Textile Structures is an ideal option for those interested in Textile Engineering. This program offers a complete training with a specific focus on openwork structures, mesh and nonwoven fabrics. This way, engineers will be able to deepen their understanding of the basic mechanical and chemical properties of these structures, as well as the methods of obtaining and analyzing them. In addition, the program is taught entirely online, allowing students to study at their own pace and from anywhere. Also, with the use of virtual simulations and the Relearning method, an effective education adapted to the needs of the sector is guaranteed, including the latest innovations in machinery and sustainable approaches to textile production.





“

*With TECH's study system, you will be able to organize your time and pace of learning, adapting it to your schedule"*

## Module 1. Textile structures of openwork, mesh and non-woven fabrics

- 1.1. Textile structures
  - 1.1.1. Basic characteristics. Technologies and methods
  - 1.1.2. Mechanical characteristics. Methods and results
  - 1.1.3. Chemical characteristics. Methods and results
- 1.2. Methods of obtaining openwork textile structures. Analysis
  - 1.2.1. Looms and their design
  - 1.2.2. Textile structures of openwork. Analysis and Design
  - 1.2.3. Fabrics and Jacquard technology. Identification and analysis
- 1.3. Methods used to obtain mesh or knitted textile structures. Analysis
  - 1.3.1. Processes and weaving looms. Identification and classification
  - 1.3.2. Mesh fabrics. Characteristics and structural parameters
  - 1.3.3. Mesh structures and range of technical applications according to the technology used. Identification
- 1.4. Methods used to obtain nonwoven fabrics. Analysis
  - 1.4.1. Nonwoven fabrics. Key Features
  - 1.4.2. Nonwoven fabric forming and processing technologies
  - 1.4.3. Technical application ranges of nonwovens
- 1.5. Innovations in the industrial sector of weaving technologies
  - 1.5.1. New machinery developments in the last decades for the design of openwork fabrics
  - 1.5.2. Openwork fabrics. Multi-sectoral approach within the industry
  - 1.5.3. Sustainability. Producers of openwork textiles, utilization of pre-consumer remnants
- 1.6. Innovations in the industrial sector of netting technologies
  - 1.6.1. Changes and innovations in netting machinery
  - 1.6.2. Hightech applications of mesh structures in highly complex industrial sectors
  - 1.6.3. Adaptation of netting industries to environmental requirements







- 1.7. Development and technological innovation in the field of nonwovens
  - 1.7.1. Development of highly specific machinery for the utilization of leftovers
  - 1.7.2. Nonwovens as a solution for the adaptation and transformation of the textile industry
  - 1.7.3. Hightech applications of nonwovens in complex and advanced technology sectors
- 1.8. Design of openwork textile structures
  - 1.8.1. Parameter settings for designing openwork fabrics
  - 1.8.2. Determination of applications for specific designs of openwork
  - 1.8.3. Recirculating design of openwork textile structures
    - 1.8.3.1. Key aspects for reintroducing textiles back into the value chain
- 1.9. Design of textile mesh structures
  - 1.9.1. Setting the parameters for designing mesh fabrics
  - 1.9.2. Determination of applications for specific mesh designs
  - 1.9.3. Recirculating design of textile mesh structures
    - 1.9.3.1. Key aspects for reintroducing textiles back into the value chain
- 1.10. Design of nonwoven fabrics
  - 1.10.1. Parameter settings for designing nonwoven fabrics
  - 1.10.2. Determination of applications for specific nonwoven fabrics designs
  - 1.10.3. Recircular design of nonwoven fabrics
    - 1.10.3.1. Key aspects for reintroducing textiles back into the value chain



*This is your opportunity to access the best theoretical-practical contents of the academic panorama, only in the TECH library"*

05

# Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.







“

*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

### Case Study to contextualize all content

Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.



*At TECH, you will experience a learning methodology that is shaking the foundations of traditional universities around the world"*



*You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.*



*The student will learn to solve complex situations in real business environments through collaborative activities and real cases.*

### A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch, which presents the most demanding challenges and decisions in this field, both nationally and internationally. This methodology promotes personal and professional growth, representing a significant step towards success. The case method, a technique that lays the foundation for this content, ensures that the most current economic, social and professional reality is taken into account.

“*Our program prepares you to face new challenges in uncertain environments and achieve success in your career”*

The case method is the most widely used learning system in the best faculties in the world. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the program, the studies will be presented with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their ideas and decisions.



## Relearning Methodology

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

*In 2019, we obtained the best learning results of all online universities in the world.*

At TECH, you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our university is the only one in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.



In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

*Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.*

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.



This program offers the best educational material, prepared with professionals in mind:



### Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



### Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



### Practising Skills and Abilities

They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



### Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





**Case Studies**

Students will complete a selection of the best case studies chosen specifically for this program. Cases that are presented, analyzed, and supervised by the best specialists in the world.



**Interactive Summaries**

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



**Testing & Retesting**

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.





06

# Certificate

The Postgraduate Certificate in Textile Structures guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.



“

*Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”*

This **Postgraduate Certificate in Textile Structures** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Certificate** issued by **TECH Technological University** via tracked delivery\*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Certificate, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Certificate in Textile Structures**

Official N° of hours: **150 h.**



\*Apostille Convention. In the event that the student wishes to have their paper certificate issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.





## Postgraduate Certificate Textile Structures

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

# Postgraduate Certificate Textile Structures

