

Postgraduate Certificate Textile Fibers and Yarns





Postgraduate Certificate Textile Fibers and Yarns

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Credits: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtitute.com/us/engineering/postgraduate-certificate/textile-fibers-yarns

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

The study of Textile Fibers and Yarns in Engineering is a multidisciplinary field of great relevance today, as they are essential materials in various industrial sectors, including textiles, automotive, medicine and fashion. As a result, the demand for innovative and sustainable textile materials is on the rise, which has led to a growing need for engineers involved in the production of new and sustainable materials. In that sense, professionals trained in textile fibers and yarns can contribute to technological progress in the textile industry and help meet the growing demand for sustainable materials in the industry. For all these reasons, TECH offers a complete program in 100% online mode for the student to upgrade their knowledge and be able to respond to a constantly evolving industry.



“

Thanks to the education you will get with this program, you will be able to perform as one of the best professionals"

From the production of textile fibers to the manufacturing of yarns, the textile industry has a vast knowledge that adapts to the needs of different fields. For example, in the automotive sector, rigorous equipment safety is required, and in the medical field, there is a need for conscious handling of the equipment for safe use in laboratories and surgical procedures.

As a result, industry professionals must constantly refine chemical and physical methods for fiber extraction and yarn processing to reduce the margin of error and offer the best service globally. The textile industry is one of the largest sectors of the world economy, with an annual growth rate of 5.5% and an estimated market value of 1,220 billion dollars. In addition, it is responsible for the creation of 60 million jobs worldwide.

For all these reasons, TECH together with a team of experienced engineers have created a degree that meets the growing need for highly trained professionals in this sector. All of this through 6 weeks of 100% online teaching that will allow the engineer to study while combining their other daily activities, whenever and wherever they want. In addition, TECH includes in all its programs the Relearning method, consisting of the reiteration of fundamental concepts throughout the syllabus so you can integrate this knowledge in a natural and progressive way, without having to dedicate hours to memorization.

This **Postgraduate Certificate in Textile Fibers and Yarns** 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 Fibers and Yarns
- ◆ The graphic, schematic and eminently practical contents with which it is conceived provide practical information on those 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



Through this program you will be able to detect the benefits offered by textiles to undertake a wide number of technical interventions in different sectors"

“

Make your integral learning compatible with your professional and personal work through the study facilities offered by TECH”

The program includes in its teaching staff professionals from the sector who bring to this course the experience of their work, as well as renowned specialists from prestigious societies and 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, students will be assisted by an innovative interactive video system developed by renowned experts.

Through a program of studies designed by the best experts in Textile Engineering, you will adopt the most advanced knowledge regarding the development of innovations in the finishing process during fiber production.

The cutting-edge Relearning method of this degree will enable you to learn at your own pace from anywhere.



02

Objectives

With the purpose of perfecting the knowledge already obtained by the professional, this Postgraduate Certificate will give the student the possibility of broadly developing their skills and abilities in the area of Textile Fibers and Yarns. This way, the student will get a deep upgrade and will be able to achieve a first level preparation with the wide didactic range that TECH covers in this program. Therefore, the engineer who enrolls in this degree will be able to catapult their professional success.



“

Master the field of Textile Fibers and Yarns by achieving your goals and becoming an elite professional in Textile Engineering”



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

- ◆ Identify textile fibers according to their morphology
- ◆ Develop textile applications according to the basic characteristics of fibers
- ◆ Determine the processes to obtain fibers and the processes to produce yarns
- ◆ Analyze the innovative fiber and yarn finishing processes

“

You will give your career a professional boost thanks to this exclusive Postgraduate Certificate in Textile Fibers and Yarns”

03

Course Management

Under the guidance of the best prepared professionals in the field of Textile Engineering and with excellent teaching experience, the student will go through the path of this course, deepening their knowledge of high-performance fibers. This way, the graduates will be able to use their experience and practice in the current context to modernize their praxis and implement advanced techniques in the spinning processes to obtain yarns for an unparalleled professional performance.

“

With the help of excellent and highly qualified professionals you will be able to improve your knowledge and reach your career goals”

Management



Dr. González López, Laura

- ♦ Expert in Textile and Paper Engineering
- ♦ 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

- ♦ Specialist in the sports textile industry
- ♦ 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

The content of this syllabus has been designed so that the professionals who opt for this program are prepared in the area of Textile Fibers and Yarns. With the structure of this syllabus, the students will follow the path of knowledge that will lead them to deepen their basic knowledge, broadening their perspective, perfecting their labor field and determining an important upgrade that will require objectives and will offer important professional benefits in the long term. Step by step, you will be prepared in the methods that are used today in the production of fibers and textile yarns.



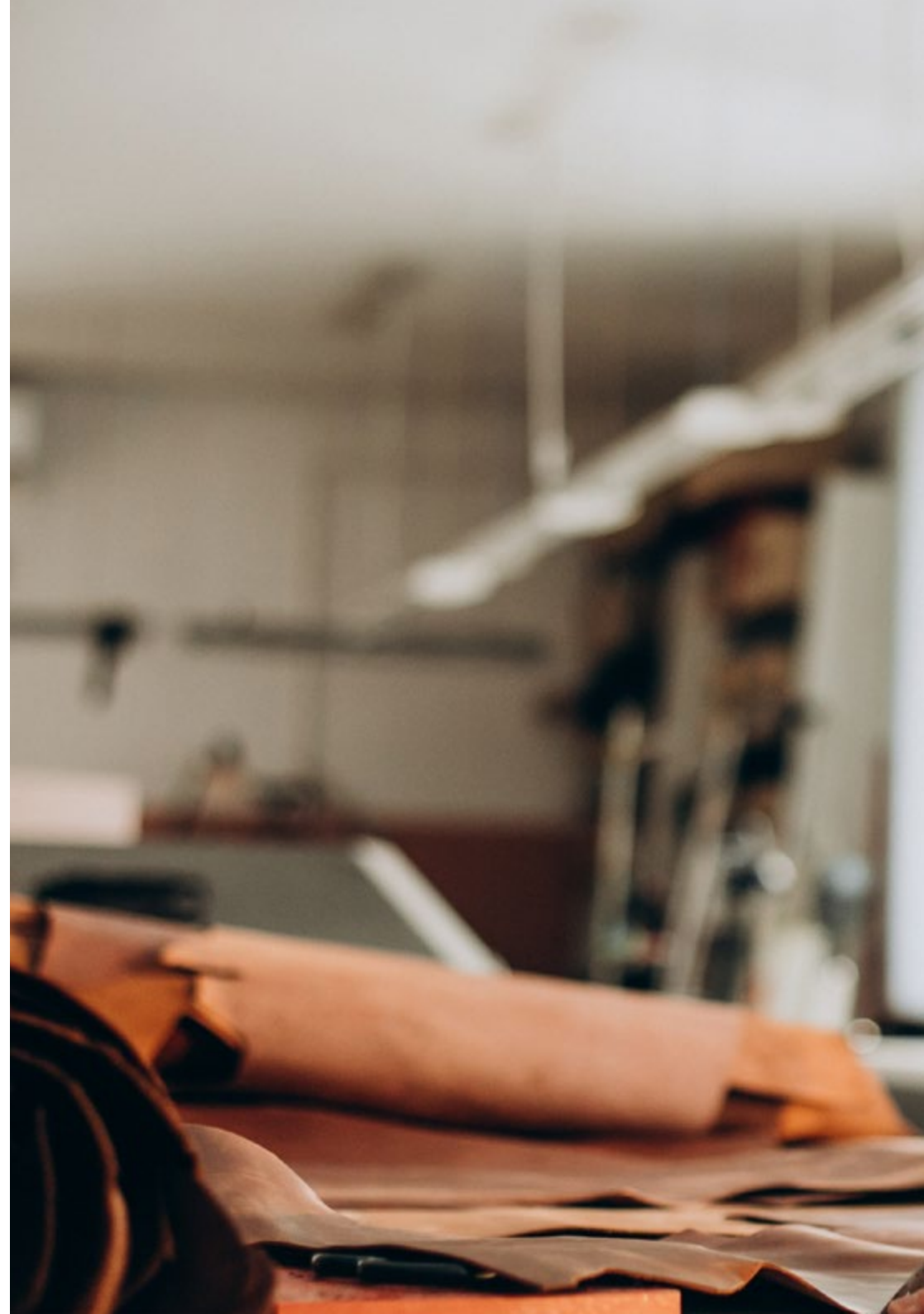


“

A carefully constructed program to keep you up to date on the physical and chemical morphology of textile fibers and their particularities”

Module 1. Fibers and yarns for textile product design

- 1.1. Textile Fibers
 - 1.1.1. Nature of Textile Fibers
 - 1.1.2. High performance fibers
 - 1.1.3. Identification, classification and description of textile fibers
 - 1.1.4. Physical and chemical morphology of textile fibers and their specific characteristics
- 1.2. Textile fiber obtaining methods
 - 1.2.1. Methodology and specific technologies for the production of fibers according to their nature
 - 1.2.2. Physical Method
 - 1.2.3. Chemical Method
- 1.3. Industrial processes in yarn manufacturing
 - 1.3.1. The carding process and the obtaining of nappa
 - 1.3.2. The steps of drafting and determination of parameters
 - 1.3.3. Spinning types in the industrial process
- 1.4. Innovations in the finishing process during fiber extraction
 - 1.4.1. Types of fiber finishes and their function
 - 1.4.2. Application and functionality of microcapsules in the spinning process
 - 1.4.3. Innovations in the finishing process during fiber extraction
- 1.5. Innovations in Finishing during the yarn manufacturing process
 - 1.5.1. Application of finishes during the different industrial steps
 - 1.5.2. Transformation of basic yarn characteristics with the application of finishes
 - 1.5.3. Specific applications and techniques for intrinsically modified yarns
- 1.6. High performance fibers
 - 1.6.1. Specifications and characteristics of high mechanical performance fibers
 - 1.6.2. Specifications and characteristics of high thermal performance fibers
 - 1.6.3. Innovations in the field of nanofibers and biofibers





- 1.7. Advanced techniques in spinning processes to obtain yarns. New fiber developments
 - 1.7.1. Innovations in yarns made of modified natural fibers
 - 1.7.2. New natural textile fibers of recent discovery and/or recovery of their use in industry
 - 1.7.3. Technological innovations for the spinning of staple, regenerated and recovered fibers
- 1.8. Specific wool fiber processes and spinning processes
 - 1.8.1. The wool cleaning process and its environmental problems
 - 1.8.2. Spinning processes of wool fibers
 - 1.8.3. Specific applications and techniques in the use of wool as fiber
- 1.9. Fancy yarns for fashion and home textile applications
 - 1.9.1. Process of obtaining fancy yarns
 - 1.9.2. Applications of fancy yarns in the fashion industry. Examples:
 - 1.9.3. Applications of fancy yarns in the home textile sector. Examples:
- 1.10. Smart Yarns (*Smart Yarns*)
 - 1.10.1. Types of smart yarns
 - 1.10.2. Smart yarn applications in industrial sectors
 - 1.10.3. High-performance technologies and applications with intelligent yarns



With this study plan you will be able to specialize in the area of Textile Fibers and Yarns, becoming a first level professional"

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 Fibers and Yarns guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



“

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

This program will allow you to obtain your **Postgraduate Certificate in Textile Fibers and Yarns** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Textile Fibers and Yarns**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



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

future
health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning
community commitment
personalized service innovation
knowledge present quality
development languages
virtual classroom



Postgraduate Certificate Textile Fibers and Yarns

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Credits: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Postgraduate Certificate Textile Fibers and Yarns