

# Postgraduate Certificate

## Microbiota and the Immune System in Nursing



## Postgraduate Certificate Microbiota and the Immune System in Nursing

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

Website: [www.techtitute.com/in/nursing/postgraduate-certificate/microbiota-immune-system-nursing](http://www.techtitute.com/in/nursing/postgraduate-certificate/microbiota-immune-system-nursing)

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# 01

# Introduction

Scientific research in the field of microbiota has been booming in recent decades, aimed both at the study of its characteristics and its impact on our health. The study of human microbiota opens the door to the knowledge of multiple diseases, especially the so-called functional diseases, with the microbiome being researchers' main workhorse. Aware of this, TECH professionals have designed this program that aims to train nurses to be able to understand what Microbiota are, their involvement in the Immune System and in health. All this will make them much more competent professionals, prepared to work in various fields of medicine with greater guarantees.







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*Scientific evidence has demonstrated the importance of the Microbiota in our Immune System. Immerse yourself in this Diploma and learn all aspects of this topic"*

Numerous pieces of scientific evidence have implicated the respiratory microbiome and its potential impact on various disease states in recent years. All this has given rise to new therapeutic strategies aimed at controlling and regulating this ecosystem. The study of this ecosystem is a field that is rapidly advancing scientifically, and it is universally accepted that to achieve an adequate state of health it is also necessary to have a "healthy" Microbiota.

The microbiota undergoes changes as a consequence of the influence of multiple factors, diet, lifestyle, pharmacological treatments, etc., generating alterations in this bacterial ecosystem and the anomalous interaction that the organism could have with it is related to certain processes: allergies, acute and chronic intestinal diseases, obesity and metabolic syndrome, neurological diseases, dermatitis and other alterations in the dermis, and even some types of cancer.

In this sense, this Postgraduate Certificate in Microbiota and the Immune System in Nursing focuses on providing nurses with the necessary information to understand the involvement of our bacterial system in the maintenance of our immune system and to know, at a general level, our Microbiota, its Eubiosis and Dysbiosis and the problems related to it.

Also, during the course of the training, the aspects that trigger the balance and imbalance of the Microbiota and the use of Probiotics and Prebiotics as a means of healing from these imbalances will be discussed in depth. In the same way, we will study the launching on the market of various products with very specific strains for very specific problems and diseases related to problems in the microbial system.

This Postgraduate Certificate includes cutting-edge content, including the latest advances in the study of the microbiota and its relationship with the immune system. This will allow For Nursing professionals to be up to date with all the advances in this regard, to offer the patient more accurate information on the subject, guiding them to recover and maintain that bacterial Eubiosis as a means to achieve a good state of health, in addition to collaborating in a positive way with the recommended medical treatment.

This **Postgraduate Certificate in Microbiota and the Immune System in Nursing** contains the most complete and up-to-date scientific program on the market. The most important features of the program include:

- ♦ Development of case studies presented by experts in Microbiota
- ♦ The graphic, schematic, and practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional practice
- ♦ New developments on Microbiota
- ♦ Contains practical exercises where the self-evaluation process can be carried out to improve learning
- ♦ With special emphasis on innovative methodologies in Microbiota
- ♦ All of this will be complemented by theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Availability of content from any fixed or portable device with internet connection

“*Improve your knowledge in Microbiota and the Immune System in Nursing through this program, where you will find the best didactic material, as well as real cases*”



# 02

# Objectives

The main objective of the program is the development of theoretical and practical learning, so that the professional can master in a practical and rigorous way the study of Microbiotics in the daily practice of your profession. In this sense, the Postgraduate Certificate in Microbiota and the Immune System in Nursing responds to the continuous demand of professionals for quality education in this area, which serves as a means to use microbiological therapy as a preventive or therapeutic tool in maintaining the health of their patients of all ages.





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*TECH employs the latest educational technology with the goal of thoroughly training you in Microbiota and the Immune System in Nursing”*



## General Objectives

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- ◆ This Postgraduate Programming meets a need of today's society, a quality and up-to-date training that allows the use of microbiological therapy as a preventive or therapeutic tool for the maintenance of health
- ◆ Offer a complete and wide vision of the current situation in the area of the Intestinal Microbiota, in its widest sense, the importance of the balance of this Microbiota as a direct effect on our health, with the multiple factors that influence it positively and negatively
- ◆ Argue with the backing of scientific evidence how a high degree of importance is currently being given to the Microbiota and its interaction with many non-digestive, autoimmune pathologies or its relationship with the dysregulation of the immune system, the prevention of diseases, and as a support to other medical treatments
- ◆ Promote work strategies based on the integral approach of the patient as a reference model, not only focusing on the symptomatology of the specific pathology, but also looking at its interaction with the Microbiota and how it may be influencing it
- ◆ Encourage professional stimulation through continuous education and research





### Specific Objectives

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- ◆ Know the Immune System Physiology
- ◆ Understand the implication of nutrition and lifestyle and their interaction with the immune system and the Microbiota
- ◆ Know the bidirectional relationship between Microbiota and the neuroimmunoendocrine system
- ◆ Understand the involvement of the Microbiota in the triggering of nervous system diseases such as anxiety, depression, schizophrenia and others
- ◆ Understand the functioning of the gut-brain Microbiota
- ◆ Deepen in the current lines of research on the subject

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*Update your knowledge through the program on Microbiota and the Immune System in Nursing”*

03

# Course Management

The program's teaching staff includes leading specialists in Human Microbiota and other related areas, who bring their years of work experience to this training program. In addition, other specialists of recognized prestige participate in its design and elaboration, completing the program in an interdisciplinary manner. All this, with the aim of providing nurses with the most complete information and contents of the educational panorama so that they can practice their profession with greater guarantees of success and care for patients with full knowledge of the functioning of their microbiota and its involvement with the immune system, offering them solutions much more adapted to their characteristics.





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*The best professionals are at the best university.  
Don't miss the opportunity to train with them"*



## Guest Directors



### Dr Sánchez Romero, María Isabel

- ♦ Area Specialist in the Microbiology Department of the Puerta de Hierro University Hospital, Madrid
- ♦ Doctor in Medicine and Surgery from the University of Salamanca (2003) with the qualification of outstanding cum laude
- ♦ Degree in Medicine and Surgery from the University of Salamanca
- ♦ Medical Specialist in Clinical Microbiology and Parasitology
- ♦ Member of the Spanish Society of Infectious Diseases and Clinical Microbiology
- ♦ Technical Secretary of the Madrid Society of Clinical Microbiology



### Dr Portero, María Francisca

- ♦ Acting Head of the Microbiology Department of the Puerta de Hierro University Hospital, Madrid
- ♦ Doctorate in Medicine from the Autonomous University Madrid
- ♦ Degree in Medicine and Surgery from the Autonomous University of Madrid
- ♦ Specialist in Clinical Microbiology and Parasitology, Puerta de Hierro University Hospital, Madrid
- ♦ Postgraduate in Clinical Management by Gaspar Casal Foundation

**Co-Direction****Ms. Fernández Montalvo, María Ángeles**

- ♦ Degree in Biochemistry from the University of Valencia
- ♦ Specialist Degree in Nutrition, Dietetics, and Diet Therapy
- ♦ Expert in Microbiological Food Analysis
- ♦ Expert in Nutrition, Food, and Cancer. Prevention and Treatment
- ♦ Expert in Vegetarian, Clinical, and Sports Nutrition
- ♦ Specialist in food intolerances and the study of the intestinal microbiota
- ♦ Numerous courses on Intestinal microbiota, methods of analysis, and applications
- ♦ Diploma in Natural and Orthomolecular Medicine
- ♦ Expert in the current use of Nutricosmetics and Nutraceuticals in general
- ♦ Expert in point-of-sale management in Pharmacies and Parapharmacies
- ♦ Member of the Spanish Society of Probiotics and Prebiotics (SEPyP)
- ♦ Member of the Spanish Society of Dietetics (SEDCA)
- ♦ Member of the Spanish Society of Nutrition (SEÑ)

## Professors

### Ms. Alarcón Cavero, Teresa

- ◆ Specialist in the Microbiology Department at the La Princesa University Hospital
- ◆ Degree in Biological Sciences with a major in Fundamental Biology from the Complutense University of Madrid
- ◆ Master's Degree in Medical Microbiology from the Complutense University of Madrid
- ◆ Head of Group 52 of the Research Institute of the La Princesa Hospital

### Dr Muñoz Algarra, María

- ◆ Area Specialist in the Microbiology Department of the Puerta de Hierro Majadahonda University Hospital, Madrid
- ◆ Head of Patient Safety of the Microbiology Service in the H.U. Puerto de Hierro Hospital Majadahonda
- ◆ Doctorate in Pharmacy from the Complutense University of Madrid
- ◆ Degree in Pharmacy from the University of Valencia
- ◆ Teaching collaborator at the School of Medicine in the subject of Microbiology at the Autonomous University of Madrid

### Dr. López Dosil, Marcos

- ◆ Specialist Physician of the Microbiology and Parasitology Department of the Hospital de Móstoles
- ◆ Degree in Medicine from the University of Santiago de Compostela
- ◆ Master's Degree in Infectious Diseases and Antimicrobial Treatment from CEU Cardenal Herrera University
- ◆ Master's Degree in Tropical and Health Medicine from the Autonomous University of Madrid
- ◆ Expert in Tropical Medicine from the Autonomous University Madrid



**Anel Pedroche, Jorge**

- ◆ Facultative Area Specialist. Microbiology Department. Puerta de Hierro University Hospital
- ◆ Degree in Pharmacy from the Complutense University of Madrid
- ◆ Course in Interactive Sessions on Hospital Antibiotherapy by MSD
- ◆ Updating course on infection in hematologic patients by Puerta del Hierro Hospital
- ◆ Attendance at the XXII Congress of the Spanish Society of Infectious Diseases and Clinical Microbiology

**Dr Méndez García, Celia**

- ◆ Doctorate in Microbiology from the University of Oviedo
- ◆ Research at Novartis Laboratories (Boston)

**Narbona López, Eduardo**

- ◆ Professor of Pediatrics, University of Granada, Spain
- ◆ Neonatal Unit, San Cecilio University Hospital, Madrid

**Dr Riostras de Bustos, Beatriz**

- ◆ Degree in Biology Medicine, University of Oviedo
- ◆ Professional Master's Degree in Neuroscience Research. University of Oviedo
- ◆ Doctorate from the University of Oviedo. "Streptomyces development: regulation and industrial applications"
- ◆ Publications in the field of microbiology
- ◆ Participation in various conferences in the field of microbiology
- ◆ Immunology Resident at HUCA

**Ms. Rodríguez Fernández, Carolina**

- ◆ Degree in Biology from the University of Oviedo

**Uberos Fernández, José**

- ◆ Associate Professor of Pediatrics, University of Granada
- ◆ Assistant Professor. Faculty of Medicine. University of Granada
- ◆ Neonatal Intensive Care Unit Clinical Assistant. San Cecilio Clinical Hospital, Granada (Spain)
- ◆ Vocal Bioethics Research Committee of the Province of Granada (Spain)
- ◆ Coeditor of the Signs and Symptoms Journal
- ◆ Professor Antonio Galdo Award. Society of Pediatrics of Eastern Andalusia. For the article entitled: analysis of nutritional intake in very low birth weight infants and its impact on the severity of bronchopulmonary dysplasia and other comorbidities.
- ◆ Editor of the Journal of the Pediatric Society of Eastern Andalusia (Bol. SPAO)
- ◆ President of the Scientific Committee of the XVIII Congress of Pediatric Societies of Eastern Andalusia, Extremadura, and Western Spain. Granada
- ◆ Member of the Organizing Committee of the XIV Congress of the Spanish Society of Adolescent Medicine, Granada
- ◆ Member of the Organizing Committee of the XIV Congress of the Spanish Society of Adolescent Medicine
- ◆ Spanish Secretary of the XX Congress of Social Pediatrics, Granada

**Ms. Álvarez García, Verónica**

- ◆ Degree in Medicine
- ◆ Digestive system specialist at the Central Hospital of Asturias (HUCA)

**Dr Alonso Arias, Rebeca**

- ♦ Degree in Biology from the University of Oviedo
- ♦ Doctorate in Biological Sciences from the Complutense University of Madrid
- ♦ Specialist Immunology Physician at the Central University Hospital of Asturias
- ♦ Heads the Immunosenescence research group of the Central University Hospital of Asturias Immunology Service
- ♦ Numerous publications in international scientific journals
- ♦ Research work on the association between the microbiota and the immune system
- ♦ 1st National Award for Research in Sports Medicine (2 occasions)

**Ms. Bueno García, Eva**

- ♦ Researcher at the Immunology Department of the Central University Hospital of Asturias

**Fernández Madera, Juan**

- ♦ Degree in Medicine
- ♦ Specialist in Allergology and Clinical Immunology
- ♦ Specialist in Sports Medicine

**Dr. Gabaldon Estevani, Toni**

- ♦ Dr. in Biology, researcher at Centre for Genomic Regulation | CRG - Bioinformatics and Genomics
- ♦ ICREA Research Professor and Group Leader of the Comparative Genomics Laboratory
- ♦ Co-Founder and Scientific Advisor (CSO) Microomics SL

**Dr. Solís Sánchez, Gonzalo**

- ♦ Neonatologist of the Central University Hospital of Asturias (HUCA). Researcher, Associate Professor of the University of Oviedo

**Dr López López, Aranzazu**

- ♦ PhD in Biological Sciences. Researcher in IA oral microbiology at FISABIO foundation
- ♦ Public Health Research Center of Valencia

**Ms. Suárez Rodríguez, Marta**

- ♦ Neonatologist of the Central University Hospital of Asturias (HUCA)
- ♦ Researcher and Professor of the Professional Master's Degree in Early Care and the Professional Master's Degree in Critical Care Nursing at the University of Oviedo and other training courses

**Ms. Verdú López, Patricia**

- ♦ 2015 - 2016: Professional Master's Degree in Esthetic and Anti-Aging Medicine at the Complutense University of Madrid
- ♦ 2007-2009: acquisition of research proficiency, PhD courses in "Advances in Traumatology, Sports Medicine, and Wound Care", "Advances in Asthma and Allergies" at the University of Las Palmas of Gran Canaria
- ♦ 2005 - 2009: Specialty of Allergology at the University Hospital Dr. Negrín in Las Palmas of Gran Canaria
- ♦ 1998 - 2004: Degree in Medicine from the University of Oviedo

**Dr Gonzalez Rodríguez, Silvia Pilar**

- ♦ Doctor of Medicine and Surgery, specialized in Gynecology
- ♦ Medical Subdirector
- ♦ Research Coordinator and Clinical Chief of the Menopause and Osteoporosis Unit at the Velázquez Medical Cabinet (Madrid)





**Dr. Lombó Burgos, Felipe**

- ◆ Doctorate in Biology from the University of Oviedo and full professor at the University of Oviedo
- ◆ Research Unit “Biotechnology in Nutraceuticals and Bioactive Compounds-BIONUC”
- ◆ Area of Microbiology, Department of Functional Biology. Faculty of Medicine, University of Oviedo

**López Vázquez, Antonio**

- ◆ Specialist in Immunology
- ◆ Central University Hospital of Asturias

**Dr Lopez Martinez, Rocio**

- ◆ Degree in Biochemistry from the University of Murcia
- ◆ Professional Master's Degree in Bioinformatics and Biostatistics from the Catalan Open University (UOC) and the University of Barcelona
- ◆ Resident Internal Biologist of Clinical Immunology at the Central University Hospital of Asturias

**Losa Domínguez, Fernando**

- ◆ Obstetrician- Gynecologist and Maternologist
- ◆ Expert in Menopause certified by the AEEM (Spanish Association for the Study of Menopause)
- ◆ Expert in Gynecoaesthetics from the University of Barcelona.

# 04

# Structure and Content

The structure of the contents has been designed by a team of professionals from the best hospitals and universities in the country, aware of the relevance of current training to prevent, detect and intervene in those pathologies related to alterations in the human Microbiota, and committed to quality teaching through new educational technologies. All this, with the aim of educating nurses who are much more competent and prepared to administer treatments that help and support the microbiome and the immune system of patients.





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*TECH experts have designed the most comprehensive and up-to-date education program on the market with the goal of training successful nurses"*

## Module 1. Microbiota and Immune System

- 1.1. Immune System Physiology. What is Immunity?
  - 1.1.1. Immune System Components
    - 1.1.1.1. Lymphoid Tissue
    - 1.1.1.2. Immune Cells
    - 1.1.1.3. Chemical Systems
- 1.2. Organs Involved in Immunity
  - 1.2.1. Primary Organs
  - 1.2.2. Secondary Organs
- 1.3. Innate, Non-Specific, or Natural Immunity
- 1.4. Acquired, Adaptive, or Specific Immunity
- 1.5. Nutrition and Lifestyle: Interaction with the Immune System and the Microbiota
- 1.6. Functional Foods and their Effect on the Immune System
  - 1.6.1. Probiotics, Prebiotics, and Symbiotics
  - 1.6.2. Nutraceuticals and Functional Foods
- 1.7. Bidirectional Relationship between Microbiota and Neuroimmunoendocrine System
- 1.8. Microbiota, Immunity and Nervous System Disorders: Anxiety, Depression, Autism, Schizophrenia, or Alzheimer's Disease.
- 1.9. The Gut-Microbiota-Brain Axis
- 1.10. Current Lines of Research







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*A unique, key, and decisive training experience to boost your professional development”*



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.





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*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"*

## At TECH Nursing School we use the Case Method

In a given situation, what should a professional do? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Nurses learn better, faster, and more sustainably over time.

*With TECH, nurses can experience a learning methodology that is shaking the foundations of traditional universities around the world.*



According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, in an attempt to recreate the real conditions in professional nursing practice.



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*Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method”*

The effectiveness of the method is justified by four fundamental achievements:

1. Nurses who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on practical skills that allow the nursing professional to better integrate knowledge acquisition into the hospital setting or primary care.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.





## Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine case studies with a 100% online learning system based on repetition combining a minimum of 8 different elements in each lesson, which is a real revolution compared to the simple study and analysis of cases.



*The nurse will learn through real cases and by solving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.*

At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology we have trained more than 175,000 nurses with unprecedented success in all specialities regardless of practical workload. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

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

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.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.



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 really 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.



### Nursing Techniques and Procedures on Video

We introduce you to the latest techniques, to the latest educational advances, to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch them as many times as you want.



### 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".



### 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.





### Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



### 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.



### 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.



### Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.





06

# Certificate

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



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

This **Postgraduate Certificate in Microbiota and the Immune System in Nursing** contains the most complete and up-to-date scientific 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 express 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 Microbiota and the Immune System in Nursing**

Official N° of Hours: **150 hours**.



\*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.

future

health confidence people

education information tutors

guarantee accreditation teaching

institutions technology learning

community commitment

personalized service innovation

knowledge present quality

online

development languages

virtual classroom

**tech** technological  
university

## Postgraduate Certificate Microbiota and the Immune System in Nursing

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



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