Postgraduate Certificate
Computing in Bioinformatics: Medical Process Digitalization and Automation

tech technological university

Postgraduate Certificate

Computing in Bioinformatics: Medical Process Digitalization and Automation

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

Website: **www.techtitute.com/pk/physiotherapy/postgraduate-certificate/computing-bioinformatics-medical-process-digitalization-automation**

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01
Introduction

The automatic treatment of information through specialized software, the development of Big Data and the inclusion of digitalization in clinical processes has allowed specialties such as Physiotherapy to develop increasingly specific and personalized strategies for their patients. It is about applying the dogmas of bioinformatics to advance in clinical cases in which, until now, little could be done due to the complexity of the processes or the lack of strategies and tools that would allow to act accordingly to the needs and specifications of the pathologies and conditions that the person could suffer. Based on this, TECH has developed a program through which the graduate will be able to update on the most relevant and innovative issues related to computing applied to clinical processes. For this purpose, 150 hours of diverse material based on the latest developments in this area will be available 100% online.

Computing in Bioinformatics is increasingly present in the in Physiotherapy field. Do you want to join the progress movement and find out what's new in this field? Enroll in this program and you will achieve it"

The joint work of Bioinformatics and Physiotherapy specialists has resulted in projects that are truly beneficial to health. An example of this is the design of personalized mattresses based on the physical characteristics of the person, which favors rest and avoids future bone and muscle problems. In this field, electrotherapy or ultrasound therapy also stand out, thanks to which it has been possible to work on the reduction of nerve pain, inflammations, the treatment of atrophied muscles and musculoskeletal injuries.

Therefore, this is an area of great interest to these specialists because of what it can contribute to their practice and, therefore, to the improvement of the service they offer to their patients. It is for this reason that TECH and its team of experts have decided to develop this Postgraduate Certificate, which will allow you to delve into the latest developments related to the creation of databases, as well as the most effective strategies for managing technology and network interfaces for bioinformatics computing.

For this purpose, you will have 150 hours of diverse content presented in different formats: detailed videos, research articles, news, complementary readings, dynamic summaries and self-knowledge exercises. In this way, you will be able to delve in a personalized way into those aspects that you consider most relevant for your professional performance. In addition, and as a remarkable feature, its convenient 100% online format will allow you to perfectly balance the educational experience with the activity of your practice.

This **Postgraduate Certificate in Computing in Bioinformatics: Medical Process Digitalization and Automation** contains the most complete and up-to-date scientific program on the market. The most important features include:

- The development of case studies presented by experts in Computing in Bioinformatics

- The graphic, schematic, and practical contents which provide scientific and practical information on the disciplines that are essential for professional practice

- Practical exercises where the self-assessment process can be carried out 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

A program that focuses on the central dogma in bioinformatics and computing, on its new developments and its current application in the healthcare field"

"You will be provided with all the information necessary to develop specialized and innovative databases, characterized by their optimized presentation and ease of management"

You decide when to connect and from where, so that you can make the most of the educational experience, as well as get the most out of it.

Would you like to delve into the main communication models through LAN, WAN, MAN and PAN networks? Then opt for a Postgraduate Certificate like this one, which will provide you with everything you need to achieve it.

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

The 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 immersive education programmed to learn in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the academic year For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

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Objectives

This Postgraduate Certificate in Computing in Bioinformatics: Medical Process Digitalization and Automation to serve as a guide for graduates in updating their knowledge. For this purpose, it will provide them with the most innovative teaching tools, as well as the best information, extracted from the main sources of the Biomedical sector. In this way, you will be able to update your knowledge in a guaranteed way, 100% online and in only 6 weeks.

"

The more demanding your objectives are, the better performance you will be able to get out of this Postgraduate Certificate, since TECH will provide you with all the teaching material you will need to achieve it"

General Objectives

- Develop key concepts of medicine that serve as a vehicle to understand clinical medicine
- Determine how to obtain metrics and tools for healthcare management
- Identify the real clinical applications of the various techniques
- Develop the key concepts of computational science and theory
- Determine the applications of computation and its implication in bioinformatics
- Provide the necessary resources to practically apply all the concepts in the modules
- Develop the fundamental concepts of databases
- Determine the importance of medical databases
- Delve into the most important techniques in research
- Analyze the use of medical devices
- Collect e-Health success stories and mistakes to avoid

Specific Objectives

◆ Understand the concept of computation

◆ Break down a computer system into its various parts

◆ Distinguish between the concepts of computational biology and bioinformatics computing

◆ Master the most commonly used tools in the field

◆ Determine future trends in computing

◆ Analyze biomedical datasets using Big Data techniques

If one of your objectives is to master the main search engines in Bioinformatics, this Postgraduate Certificate is the best option to achieve it through 150 hours of the best theoretical, practical and additional content"

03

Course Management

The direction and teaching of this Postgraduate Certificate will be in charge of a team of professionals in the field of Biomedical Engineering with a wide and extensive work experience in the management and direction of successful projects. This is a group of specialists who, in addition, are currently working, so they know in detail the latest developments in the area. These aspects will be reflected in the syllabus and in its innovative and exhaustive nature.

"What happens if you have any questions during the educational experience? Well, you will be able to consult them telematically with the teaching staff"

Management

Ms. Sirera Pérez, Ángela

- Biomedical Engineer expert in Nuclear Medicine and exoskeleton design
- Designer of specific parts for 3D printing at Technadi
- Technician in the Nuclear Medicine area of the University Clinic of Navarra
- Degree in Biomedical Engineering from the University of Navarra
- MBA and Leadership in Healthcare and Medical Technology Companies

Professors

Mr. Piró Cristobal Miguel

- E-Health Support Manager at ERN Transplantchild
- Electromedical Technician. Electromedical Business Group GEE
- Data and Analysis Specialist - Data and Analysis Team. BABEL
- Biomedical Engineer at MEDIC LAB. UAM
- Director of External Affairs CEEIBIS

- Degree in Biomedical Engineering, Carlos III University of Madrid
- Master's Degree in Clinical Engineering Carlos III University of Madrid
- Master's Degree in Financial Technologies: Fintech Carlos III University of Madrid
- Training in Data Analysis in Biomedical Research. La Paz University Hospital

04
Structure and Content

TECH is a pioneer in the use of *Relearning* methodology in the development of the content of all its programs. This pedagogical strategy consists of reiterating the most important concepts throughout the syllabus, favoring a natural and progressive updating of your knowledge. In addition, the programs include hours of additional material through which you will be able to delve in a personalized way into the aspects that you consider most relevant for your professional development and growth as a physiotherapist.

The Virtual Campus is optimized for any device with an Internet connection, so you can access it from your cell phone, tablet or computer. From wherever you want and whenever you want"

Module 1. Computing in Bioinformatics

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"

At TECH we use the Case Method

What should a professional do in a given situation? 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. Physiotherapists/kinesiologists learn better, faster, and more sustainably over time.

With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.

Optimal decision

Patient Values

Research Evidence

Clinical Data

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, trying to recreate the real conditions of professional physiotherapy practice.

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. Physiotherapists/kinesiologists 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 physiotherapist/kinesiologist to better integrate into the real world.

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 the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

The physiotherapist/kinesiologist 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.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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 trained more than 65,000 physiotherapists/kinesiologists with unprecedented success in all clinical specialties, regardless of the 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 training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for 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 our 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.

Physiotherapy Techniques and Procedures on Video

TECH brings students closer to the latest techniques, the latest educational advances and to the forefront of current Physiotherapy techniques and procedures. 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 unique multimedia content presentation training system 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.

20%

15%

15%

3%

20%

17%

7%

3%
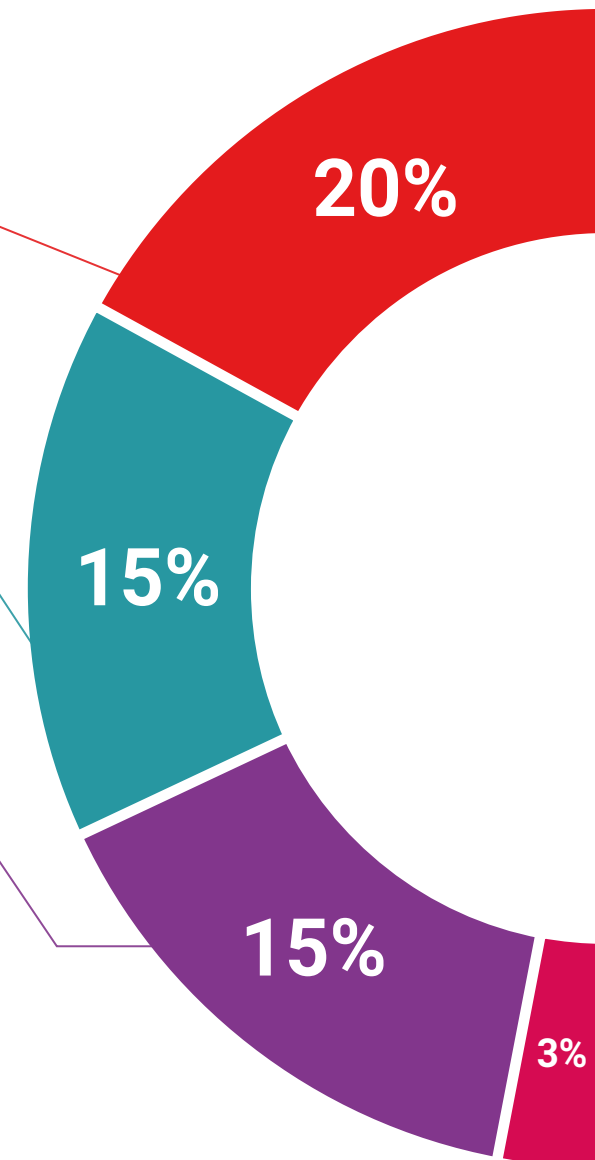
Expert-Led Case Studies and Case Analysis

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

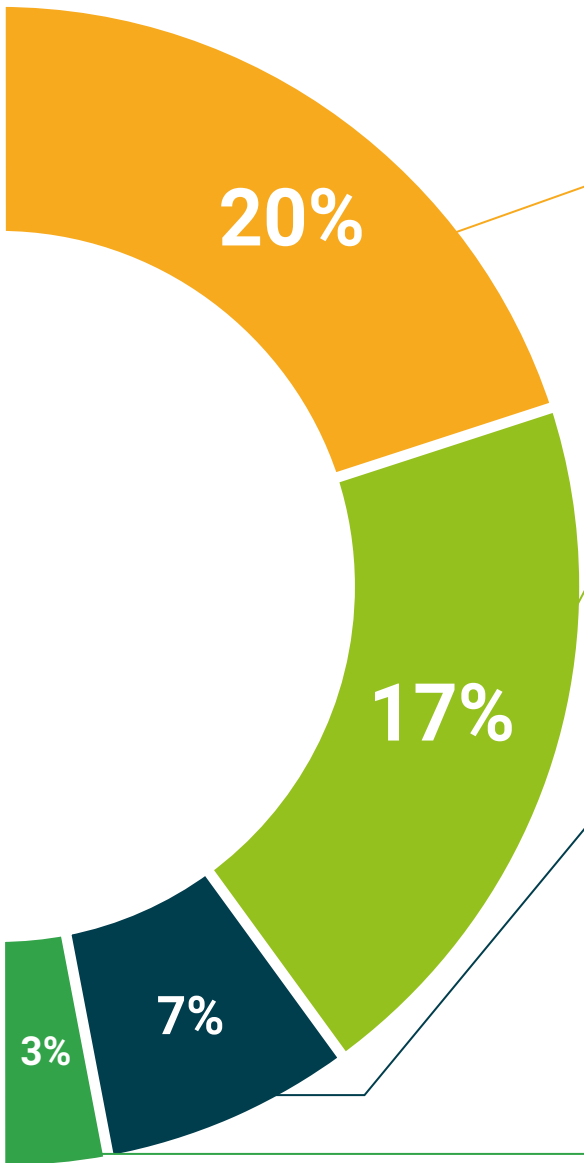We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.

Classes

There is scientific evidence on the usefulness of learning by observing experts. The system known as 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 Computing in Bioinformatics: Medical Process Digitalization and Automation 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 Computing in Bioinformatics: Medical Process Digitalization and Automation** 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 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 Computing in Bioinformatics: Medical Process Digitalization and Automation**

Official Nº of Hours: **150 h.**

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Awards the following
CERTIFICATE
to

Mr./Ms. _____, with identification number _____.
For having passed and accredited the following program

POSTGRADUATE CERTIFICATE
in

Computing in Bioinformatics: Medical Process Digitalization and Automation

This is a qualification awarded by this University, equivalent to 150 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country.   Unique TECH Code: AFWORD23S   techtitute.com/certificates

*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.

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