

Postgraduate Certificate Cyclist Exercise Physiology

Endorsed by the NBA





Postgraduate Certificate Cyclist Exercise Physiology

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

Website: www.techtute.com/us/sports-science/postgraduate-certificate/cyclist-exercise-physiology

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01

Introduction

The intense movement of the legs inherent in cycling implies a considerable energy expenditure, which makes it essential to be in good physical condition and that the cardiovascular and respiratory systems are in optimal condition. Consequently, this requires that athletes have a solid command of Physiology as the basis of their training, so this title represents a unique opportunity to update on the subject. With it, the professional will address the energy systems or the role of lactate, determining the different ventilatory thresholds. All this and more will be available to students through a very complete online format that provides numerous facilities.





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The perfect opportunity to address the physiological factors that determine a good practice of Professional Cycling”

As the cyclist trains, a series of adaptations occur at the cellular and muscular level. These allow greater efficiency in the use of energy substrates, a better capacity to produce energy and an increase in resistance to fatigue. Taken together, all these factors translate into an enhanced performance of the athlete, which is why the mastery of Physiology in this discipline is postulated as an imperative aspect.

That is why this Postgraduate Certificate is positioned as a fantastic option for the sports professional to update himself on the adaptations at the cardiovascular, respiratory, muscular and metabolic level that determine performance. Thus, during the program, the energy systems will be analyzed in detail, focusing on the metabolism of phosphagens and glycolysis. Similarly, students will examine the role of lactate and HR or HRV responses to exercise. With all this, students will improve their skills in situations such as the interpretation of hematology in athletes.

Undoubtedly, a high-level specialization with which the Sports Science professional will verify the benefits of updating at the hands of the largest online university in the world. In this sense, you should not go to a face-to-face center for a single day or submit to pre-set schedules, so the management of academic times will be at your own expense. In addition, with just an Internet connection you will have access to the largest digital library of resources on this subject.

This **Postgraduate Certificate in Cyclist Exercise Physiology** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ◆ The development of practical cases presented by experts in Physiology of Exercise in the Cyclist
- ◆ The graphic, schematic and eminently practical contents with which it is conceived collect sports and 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 for 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



Thanks to this title you will master the operation of the systems energy sources, influencing the phosphagen metabolism and glycolysis"

“

Were you looking for a degree on cycling that emphasized the female physiological characteristics for this practice? This program is for you!”

The program's teaching staff includes professionals in the sector who contribute their work experience to this educational 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 immersive education designed to learn in real situations.

The design of this program focuses on Problem-Based Learning, through which the professional must try to solve the different professional practice situations that arise throughout the academic year. To do this, it will have the help of an innovative interactive video system made by renowned experts.

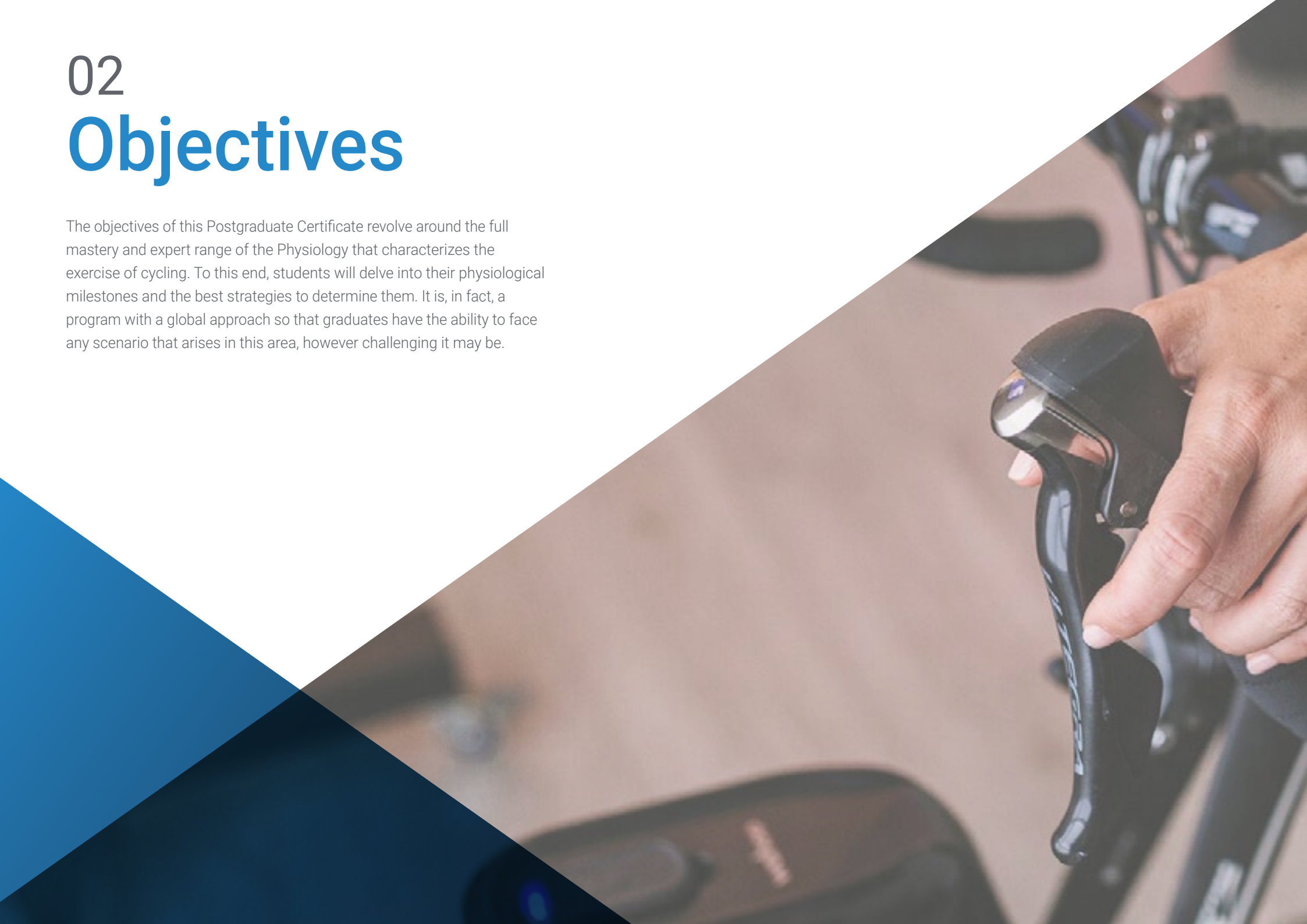
You will improve your knowledge on the interpretation of hematology in cyclists.

You will be a reference when establishing performance markers, such as FTP or VAM.



02 Objectives

The objectives of this Postgraduate Certificate revolve around the full mastery and expert range of the Physiology that characterizes the exercise of cycling. To this end, students will delve into their physiological milestones and the best strategies to determine them. It is, in fact, a program with a global approach so that graduates have the ability to face any scenario that arises in this area, however challenging it may be.



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With the objectives that TECH has prepared in this title, you will address with all the guarantees the different energy pathways and their influence on human performance”



General Objectives

- ◆ Understand the performance factors of sport and, therefore, learn to assess the specific needs of each athlete
- ◆ Being able to plan, periodize and develop training programs for cyclists, in short, train students to practice the profession of coach
- ◆ Acquire specific knowledge related to the biomechanics of cycling
- ◆ Understand the operation of the new applications used in the quantification of loads and training prescription
- ◆ Understand the benefits of strength training and be able to apply them to concurrent training
- ◆ Acquire a specialization in cycling-oriented nutrition
- ◆ Understand the functioning of the cycling structures, as well as the modalities and categories of the competitions





Specific Objectives

- ◆ Address the different energy pathways and their influence on human performance
- ◆ Know the physiological milestones and know how to determine them
- ◆ Analyze the role of lactate and HRV
- ◆ Understanding the physiology of women in sport

“

You will meet your professional goals by mastering all aspects related to performance tests”

03

Course Management

The teaching team that TECH has opted for to teach this program is postulated as one of the main strengths of the Postgraduate Certificate. In this sense, the teaching staff has prestigious experts with extensive experience training professional cyclists and triathletes, with an emphasis also on nutritional advice. In fact, they have developed a meritorious research career with important publications in wide-ranging journals.



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The extensive experience of teachers training professional cyclists and triathletes will clearly play in your favor during the educational cycle”

Management



Dr. Sola, Javier

- CEO of Training4ll
- WT UAE team coach
- Head of Performance Massi Tactic UCI Womens Team
- Specialist in the biomechanical area of Jumbo Visma UCI WT
- WKO adviser to World Tour cycling teams
- Trainer at Coaches4coaches
- Associate Professor at Loyola University
- Bachelor of Science in Physical Activity and Sport from the University of Seville
- Postgraduate in High Performance of Cyclic Sports from the University of Murcia
- Sports Director Level III
- Numerous Olympic medals and medals at European Championships, World Cups and National Championships

Professors

D. Celdrán, Raúl

- ♦ CEO of Natur Training System
- ♦ Burgos BH ProConti Team Nutrition Manager
- ♦ Performance Manager of the professional MTB Klimatiza Team
- ♦ Trainer at Coaches4coaches
- ♦ Degree in Pharmacy from the University of Alcalá
- ♦ Master in Nutrition, Obesity and High Performance in Cyclic Sports from the University of Navarra

Dr. Moreno Morillo, Aner

- ♦ Performance Manager of the Kuwait National Cycling Team
- ♦ Assistant of the Euskaltel-Euskadi ProConti Team
- ♦ Graduated in Physical Activity and Sports Sciences from the Isabel I University
- ♦ Master's degree in CAFD research from the European University
- ♦ Master in High Performance of Cyclic Sports from the University of Murcia
- ♦ Sports Director National Level III



04

Structure and Content

Throughout the 150 hours of the online academic period, the student will benefit from the individualized educational itinerary that TECH has prepared for him. In fact, delving into the syllabus, you will have the most up-to-date and comprehensive vision that exists in the market in this field, always in line with the latest advances. In addition, their academic experience will be highly efficient, since the educational cycle uses Relearning as a methodological substrate, which will make you internalize the concepts more quickly through repetition.





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A study plan that over 6 weeks will provide you with the most comprehensive and up-to-date vision of Physiology in Cycling that you will find on the market”

Module 1. Cyclist Exercise Physiology

- 1.1. Energy Systems
 - 1.1.1. Phosphagen Metabolism
 - 1.1.2. Glycolysis
 - 1.1.3. Oxidative System
- 1.2. Heart Rate
 - 1.2.1. Basal FC
 - 1.2.2. Reverse FC
 - 1.2.3. Maximum FC
- 1.3. The Role of the Lactate
 - 1.3.1. Definition
 - 1.3.2. Lactate Metabolism
 - 1.3.3. The Role in Physical Activity and in Determining Thresholds
- 1.4. Determination of Ventilatory Thresholds (Physiological Milestones)
 - 1.4.1. VT1
 - 1.4.2. VT2
 - 1.4.3. Vo2 MAX
- 1.5. Performance Markers
 - 1.5.1. FTP/CP
 - 1.5.2. VAM
 - 1.5.3. Compound Score
- 1.6. Frisby Test
 - 1.6.1. Laboratory Test
 - 1.6.2. Field Test
 - 1.6.3. Power Profile Test
- 1.7. HRV (Heart Rate Variability)
 - 1.7.1. Definition
 - 1.7.2. Measuring Methods
 - 1.7.3. HRV-Based Accommodations





- 1.8. Adaptation
 - 1.8.1. Generalities
 - 1.8.2. Central
 - 1.8.3. Peripherals
- 1.9. Blood Analysis
 - 1.9.1. Biochemistry
 - 1.9.2. Hematology
 - 1.9.3. Hormones
- 1.10. Physiology of Women
 - 1.10.1. Characteristics of the Woman
 - 1.10.2. Training and Menstrual Cycle
 - 1.10.3. Specific Supplementation

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A syllabus with which you can examine everything you need about the basal, reserve and maximum heart rate”

05

Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.



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TECH will prepare you to face new challenges in uncertain environments and achieve success in your career”

The student: the priority of all TECH programs

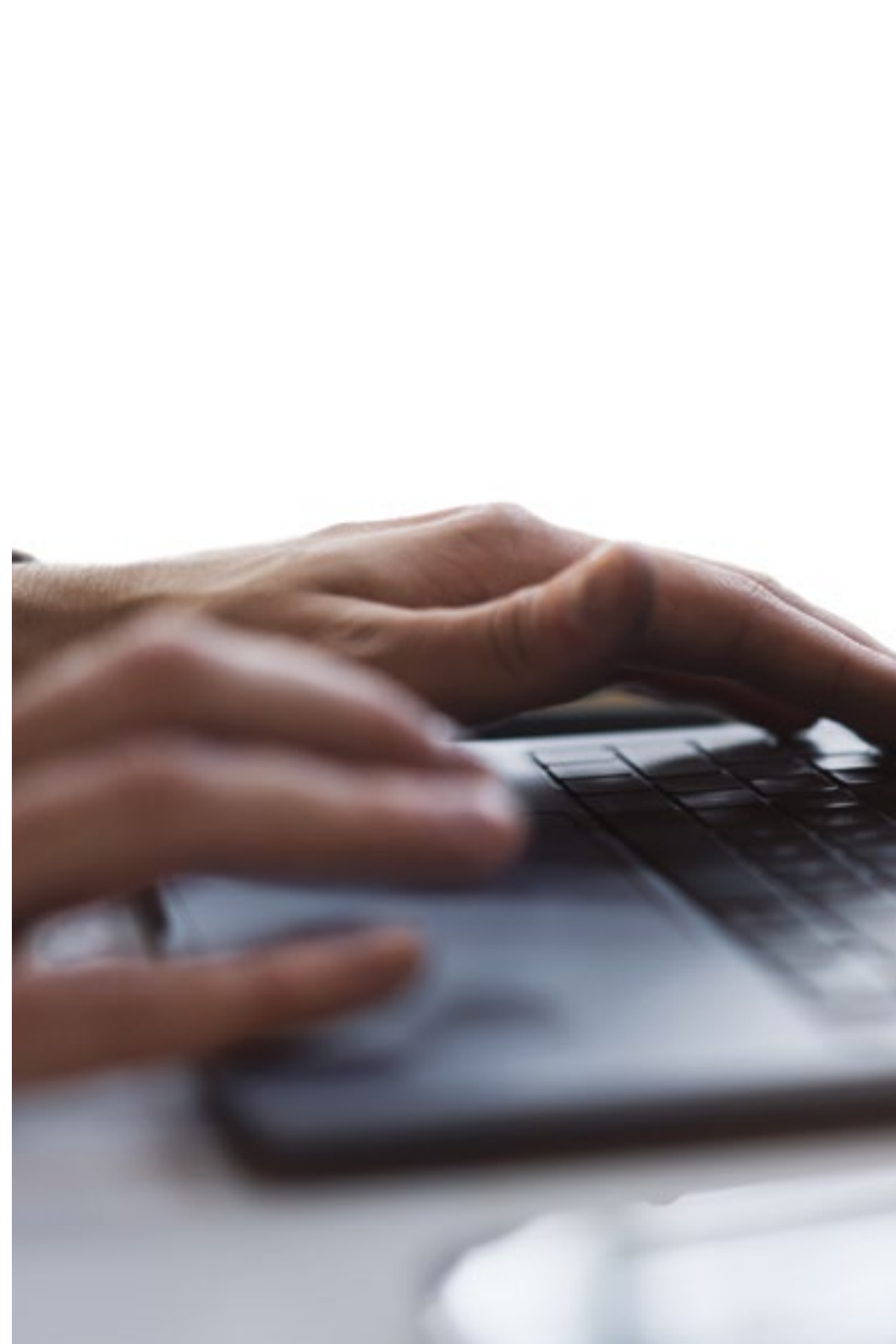
In TECH's study methodology, the student is the main protagonist.

The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

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*At TECH you will NOT have live classes
(which you might not be able to attend)”*



The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

“*TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want*”

Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.



Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

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.



A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule”

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

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student 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.

The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.

You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.



As such, the best educational materials, thoroughly prepared, will be available in this program:



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.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



Interactive Summaries

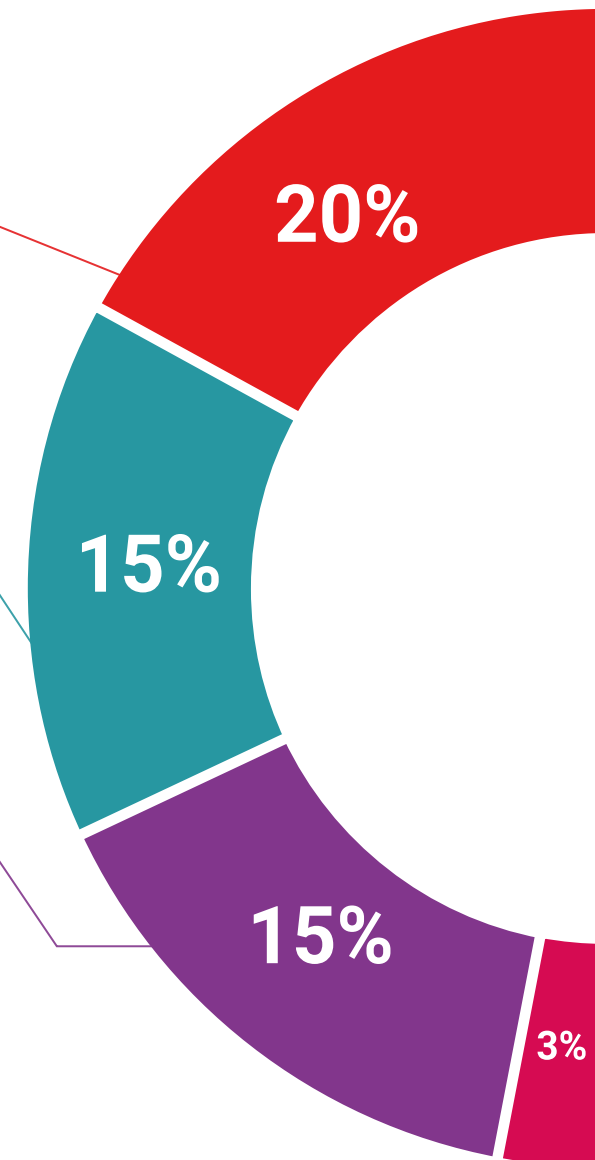
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

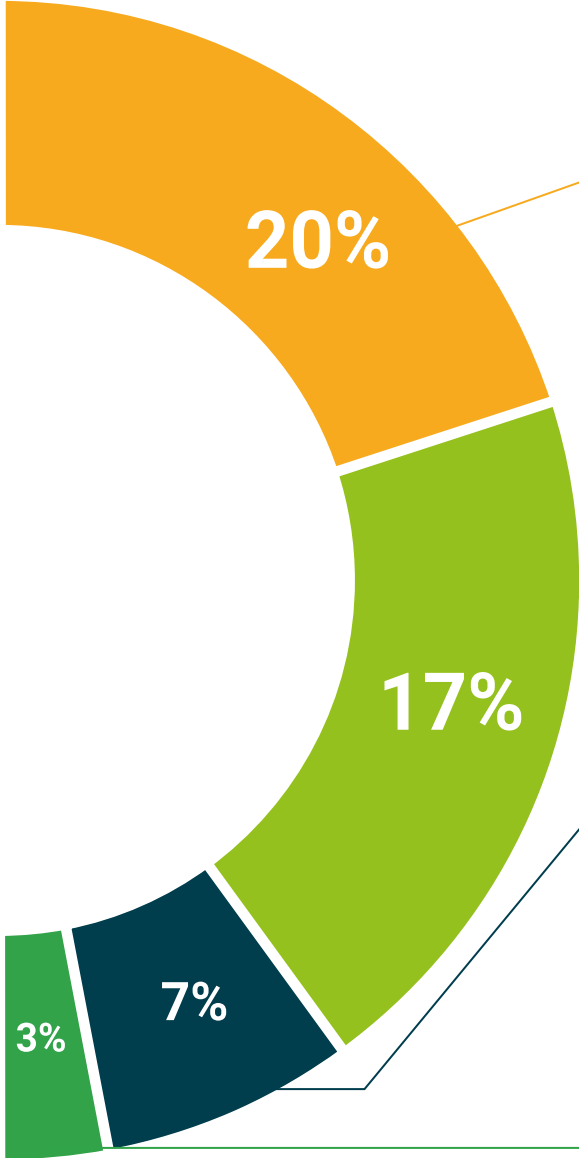
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Additional Reading

Recent articles, consensus documents, international guides... In our virtual library you will have access to everything you need to complete your education.





Case Studies

Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.



Testing & Retesting

We periodically assess and re-assess your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.



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





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

This private qualification will allow you to obtain a **Postgraduate Certificate in Cyclist Exercise Physiology** 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** private qualification 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 Cyclist Exercise Physiology**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**

Endorsed by the NBA



*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
online training
development language
virtual classroom



Postgraduate Certificate Cyclist Exercise Physiology

- » Modality: online
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- » Exams: online

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