

Postgraduate Certificate Tennis Biomechanics and Motion

Endorsed by the NBA





Postgraduate Certificate Tennis Biomechanics and Motion

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

Website: www.techtitute.com/pk/sports-science/postgraduate-certificate/tennis-biomechanics-motion

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01

Introduction

Tennis requires a unique combination of technical, physical and mental skills to achieve a high level of performance. In fact, Biomechanics is key to understanding how players move and to perfecting their technique and efficiency. That is why the sports professional must consolidate their update in this area if they want to boost the performance of tennis players, which is why this program will be extremely useful. Through it, they will analyze the strokes that are practiced in this sport and the movements involved in each of them, also putting the focus on key elements such as footwork. All this will be at their disposal in an online format.





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Master Tennis Biomechanics and Motion with the best academic opportunity in the market”

In Tennis, Biomechanics is of great value in analyzing and improving players' technique, as well as preventing injuries. For example, a biomechanical analysis can reveal that a tennis player is using too much of their arm instead of their body to hit the ball, which is susceptible to shoulder or elbow injuries. It is also able to help coaches identify inefficient movement patterns and correct them in order to improve the player's efficiency and accuracy.

In this context, there are undoubtedly numerous benefits of an advanced management of Biomechanics for the sports professional in the training of their players, which is why TECH offers this specialization. With it, they will be up-to-date with guarantee in the study of the structure, function, movement and mechanical behavior of the tennis player, which will allow them to make a difference when it comes to managing the performance of athletes.

Therefore, students will go through different practical examples of how Biomechanics works in Tennis, analyzing the different strokes that are performed in this sport and the movements involved. But to make the program even more comprehensive, students will also examine the importance of footwork and optimal strategies for moving around the court.

With just a device with an Internet connection, the sports professional will benefit from a unique opportunity to update their knowledge through the experience of great Tennis eminences. In addition, they will be able to specialize from anywhere and manage their own academic deadlines.

This **Postgraduate Certificate in Tennis Biomechanics and Motion** contains the most complete and up-to-date scientific program on the market. Its most outstanding features are:

- ♦ The development of case studies presented by experts in Tennis Biomechanics and Movement
- ♦ The graphic, schematic and practical contents of the program provide Rehabilitation 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 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



Do you want to analyze each and every stroke in Tennis at a biomechanical level? Then this is the program for you!"

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Benefit from an innovative educational methodology where the interactive component is the main protagonist to delve into all aspects of Biomechanics in Tennis”

The program's teaching staff includes professionals from the sector who bring to this course the experience of their work, in addition to renowned specialists from reference 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 programmed to learn in real situations.

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

This is the Postgraduate Certificate you are looking for if you need to improve the strategies with which your players move around the court.

Become the up-to-date coach every tennis player needs with advanced knowledge of mechanical variability in tissue loading.



02 Objectives

The area of Biomechanics has positioned itself as crucial in modern Tennis, something that has led TECH to design this program. Therefore, the objective is none other than to provide sports professionals with the latest theoretical and practical tools that allow them to incorporate strategies focused on Biomechanics into the design of their training plans, improving the efficiency and technique of each tennis player's stroke. All this, in addition, while supported by the educational technologies that will be found in the Virtual Campus.



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Get up-to-date on the Biomechanics of each ball strike as well as on the most efficient footwork”



General Objectives

- ♦ Distinguish the different stages of tennis training and know how to work in each of them
- ♦ Know the tennis regulations and how to apply them
- ♦ Understand the figure of the tennis coach from an ethical and moral point of view, and understand the crucial role played by the mental aspect in tennis players
- ♦ Delve into the physical preparation necessary for a tennis player and injury prevention
- ♦ Raising awareness of the importance of technology in today's tennis and analyzing its evolution





Specific Objectives

- Understanding biomechanics
- Comprehend, through theoretical and practical examples, the biomechanical functioning of strokes
- Analyze what is efficient in each stroke from a biomechanical point of view
- Make the student aware of the importance of footwork
- Learn how to move correctly on the tennis court



Achieve the proposed objectives related to Tennis Biomechanics and Motion by benefiting from the educational methodology of Relearning”

03

Course Management

In order to teach this program, TECH has chosen a teaching staff made up of true eminences who have trained the next generation of stars in the world of Tennis. Not surprisingly, these experts have extensive professional experience as physical trainers specialized in high performance Tennis, working in some of the best tennis academies worldwide. Therefore, with this valuable background, the professors will provide the student with all the keys that they need throughout their academic experience.





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Boost yourself to success with advice and tips from top fitness trainers who have worked with the next generation of tennis stars”

Management



Mr. Ramos Camacho, Alejandro

- ♦ Tennis coach at the Rafa Nadal Academy
- ♦ Coach at the JMO Tennis Academy
- ♦ Coach at Valle de Aridane Tennis Club
- ♦ Graduate in Primary Education
- ♦ National Monitor by the Royal Spanish Federation
- ♦ RPT Level 2

Professors

Mr. Manco, Antonio

- ♦ Tennis coach at the Rafa Nadal Academy
- ♦ Coach at the Academy Global Tennis Team
- ♦ Graduate in Sport Science from the Tor Vergata University of Rome
- ♦ Master's Degree in Sport Science and Techniques from the Tor Vergata University of Rome
- ♦ Italian Tennis Federation Level II Coach
- ♦ Physical Trainer by the Italian Tennis Federation



04

Structure and Content

Without having to follow a fixed schedule, the student will be developing throughout the academic cycle by means of the lessons and additional materials on Tennis Biomechanics and Motion. In fact, the advanced knowledge that will be covered during 6 weeks will incorporate the latest advances in the subject so that the syllabus will be as useful as possible. In addition, this personalized educational program uses Relearning as a methodological substrate, guaranteeing that the student will not finish the Postgraduate Certificate without mastering each and every one of the concepts.



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Videos, case analyses, master classes or interactive outlines on Tennis Biomechanics and Motion will boost your academic performance in the program”

Module 1. Biomechanics and Motion

- 1.1. What is Biomechanics and its Evolution
 - 1.1.1. Definition and Introduction to Biomechanics
 - 1.1.2. Evolution Concept of Biomechanics Throughout History
 - 1.1.3. What is Biomechanics for and What are its Objectives
 - 1.1.4. Benefits of Biomechanics and Main Components
 - 1.1.5. Traditional Vision of Teaching Tennis Strokes and Modern Vision
- 1.2. The Correct Performance of the Technique and its Benefits
 - 1.2.1. Definition of Optimal Technique
 - 1.2.2. Components of the Technique
 - 1.2.3. Benefits of the Optimal Technique
 - 1.2.4. Execution of the Optimal Technique
- 1.3. Variability as a Fundamental Part of the Performance of the Strokes
 - 1.3.1. Variability Concept
 - 1.3.2. Mechanical Variability in Stroke Performance
 - 1.3.3. Mechanical Variability in Stroke Development
 - 1.3.4. Mechanical Variability in Tissue Loading
- 1.4. Principles of Biomechanics in Tennis. BIOMECH
 - 1.4.1. Balance
 - 1.4.2. Inertia
 - 1.4.3. Opposition of Forces
 - 1.4.4. Momentum
 - 1.4.5. Elastic Energy
 - 1.4.6. Coordination Chain
- 1.5. Coordination Chain
 - 1.5.1. Definition
 - 1.5.2. Coordination and Movement Chains
 - 1.5.3. How to Generate Power in Strokes
 - 1.5.4. Problems in the Coordination Chains





- 1.6. The Phases of the Stroke in Tennis
 - 1.6.1. Preparation and Backward Movement of the Racket
 - 1.6.2. Forward Movement of the Racket
 - 1.6.3. Impact
 - 1.6.4. Accompaniment and Termination
- 1.7. General Biomechanical Aspects of Groundstrokes
 - 1.7.1. Biomechanics of the Forehand Stroke. Part I
 - 1.7.2. Biomechanics of the Forehand Stroke. Part II
 - 1.7.3. Biomechanics of the Two-handed Backhand Stroke
 - 1.7.4. Biomechanics of the One-handed Backhand Stroke
- 1.8. General Biomechanical Aspects in Service and Return
 - 1.8.1. Biomechanics of the Service in Tennis. Part I
 - 1.8.2. Biomechanics of the Service in Tennis. Part II
 - 1.8.3. Biomechanics of the Return in Tennis
 - 1.8.4. Biomechanics of the Backhand in Tennis
- 1.9. General Biomechanical Aspects of Groundstrokes
 - 1.9.1. Biomechanics of the Forehand Volley
 - 1.9.2. Biomechanics of the Backhand Volley
 - 1.9.3. Approach Biomechanics
 - 1.9.4. Biomechanics of Backtacking
- 1.10. Movement, Displacements and Footwork
 - 1.10.1. What are Displacements in Tennis
 - 1.10.2. Phases of Movement in Tennis
 - 1.10.3. Importance of Footwork
 - 1.10.4. How to Work on Footwork in Tennis

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”

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.

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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 we face 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.

With this methodology, we have 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, markets, and financial 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.



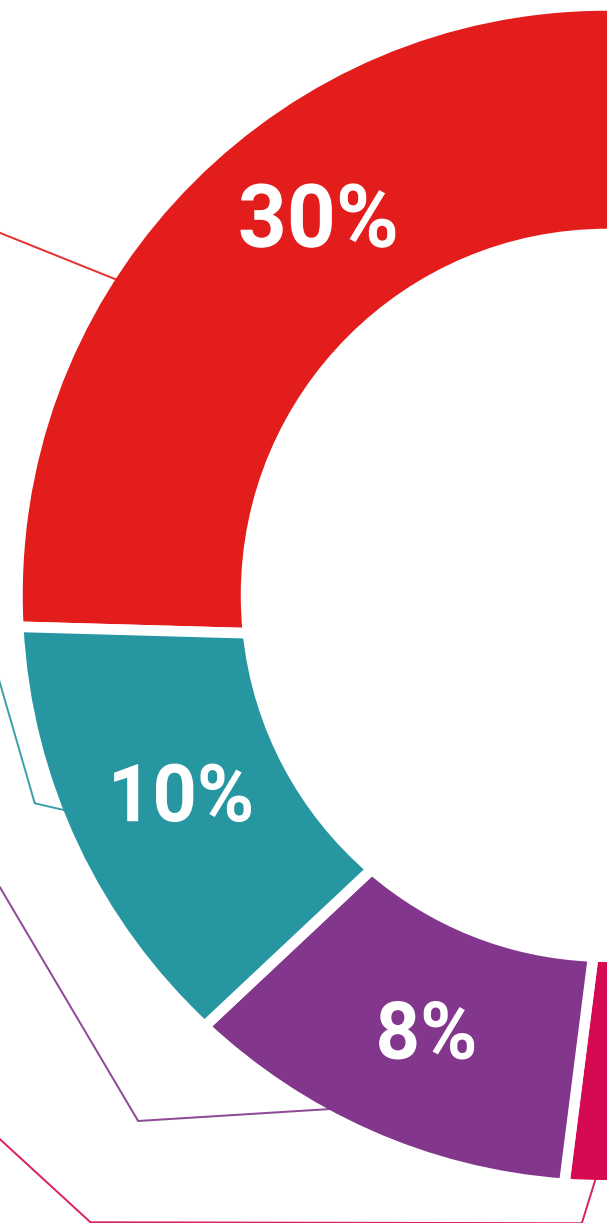
Practising Skills and Abilities

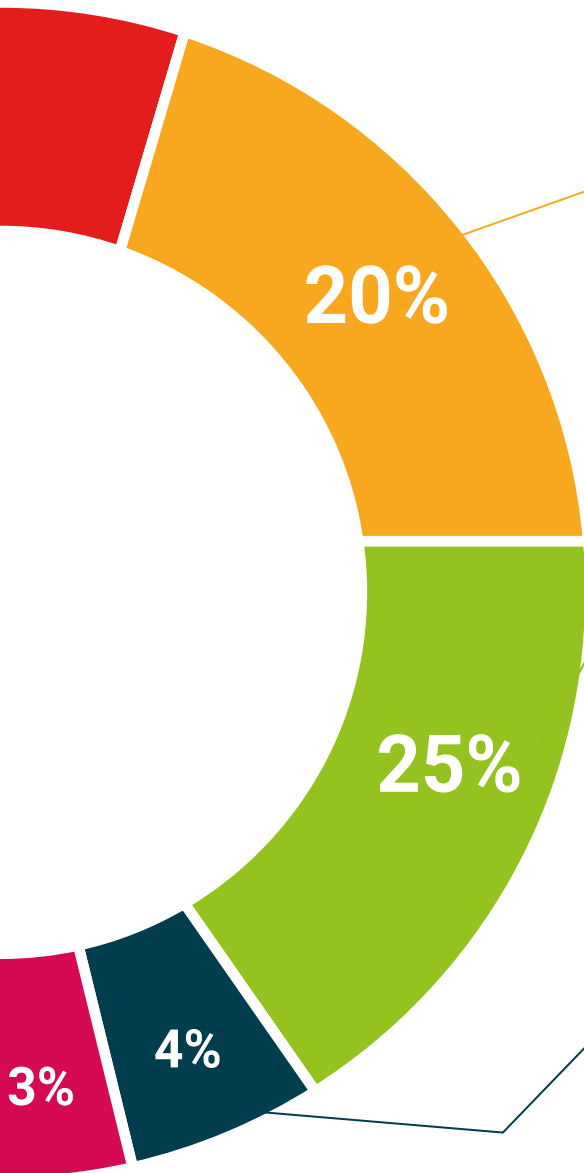
They will carry out activities to develop specific competencies and skills in each thematic area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



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 situation. 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 Tennis Biomechanics and Motion 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 Tennis Biomechanics and Motion** 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.

Program: **Postgraduate Certificate in Tennis Biomechanics and Motion**

Official No. of Hours: **150 h.**

Endorsed by the NBA



*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
development languages
virtual classroom



Postgraduate Certificate
Tennis Biomechanics
and Motion

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

Postgraduate Certificate

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