

Postgraduate Diploma

Nuclear and Particle Physics



Postgraduate Diploma Nuclear and Particle Physics

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Accreditation: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtitude.com/us/engineering/postgraduate-diploma/postgraduate-diploma-nuclear-particle-physics

Index

01

Introduction

p. 4

02

Objectives

p. 8

03

Structure and Content

p. 12

04

Methodology

p. 18

05

Certificate

p. 26

01

Introduction

Nuclear Physics has had an important development in the last decades with very direct applications in the fields of energy, medicine and industry. It has led to the development of large accelerators such as CERN's LHC, to the exploration of the universe or to the generation of therapies with heavy particles (hadrontherapy). It is in the direct application of this knowledge that engineering professionals are in high demand, both by public bodies and private entities. In view of this reality, this program was created to offer students the most advanced and exhaustive knowledge on Nuclear and Particle Physics. All of this, in addition to 100% online format, that can be accessed 24 hours a day from any device with an Internet connection.





“

*A Postgraduate Diploma that will
allow you conveniently, whenever
and wherever you wish, to delve
into nuclear structure and particles”*

Nuclear Physics applications are currently presented as the solution to some of mankind's problems, such as the search for alternative energy to some of humanity's problems, such as the search for alternative energy sources to fossil fuels, the reduction of pollution, manned space travel or the treatment of diseases through more precise and effective treatments.

A multitude of possibilities, which in turn open the way to engineering professionals who wish to obtain a solid knowledge in this field, to contribute to the development of devices or equipment. A promising future, where TECH has decided to contribute with a Postgraduate Diploma in Nuclear and Particle Physics, which will lead graduates to advance in their careers.

An exclusively online program which in only 6 months will lead you to delve into key concepts such as the hydrogen atom, the Quarkonium, baryons or light mesons. In addition, the multimedia teaching materials provided in this program will lead you to delve in a much more dynamic way into the Yang-Millis theory, cosmology and the primitive universe.

Furthermore, the simulations of case studies provided by the specialists, will lead you to acquire a closer and practical learning experience, allowing you to incorporate it into your professional performance.

This postgraduate diploma will allow the Engineers to advance their careers through an education that they can access whenever and wherever they wish. All you need is a device with Internet connection to access the content hosted on the virtual campus. In addition, you have the freedom to distribute the teaching load according to your needs. An excellent opportunity to study a quality Postgraduate Diploma while combining work and/or personal responsibilities.

This **Postgraduate Diploma in Nuclear and Particle Physics** contains the most complete and up-to-date program on the market. The most important features include:

- ♦ Practical case studies are presented by experts in Physics
- ♦ 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
- ♦ 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
- ♦ The availability of access to the contents from any device fixed or portable with Internet connection



With this Postgraduate Diploma you will be an expert in the standard model of elementary particles: leptons and quarks"



You will have access 24 hours a day, from any device with Internet connection to the application of the knowledge of quantum field theory and the mathematics of group theory”

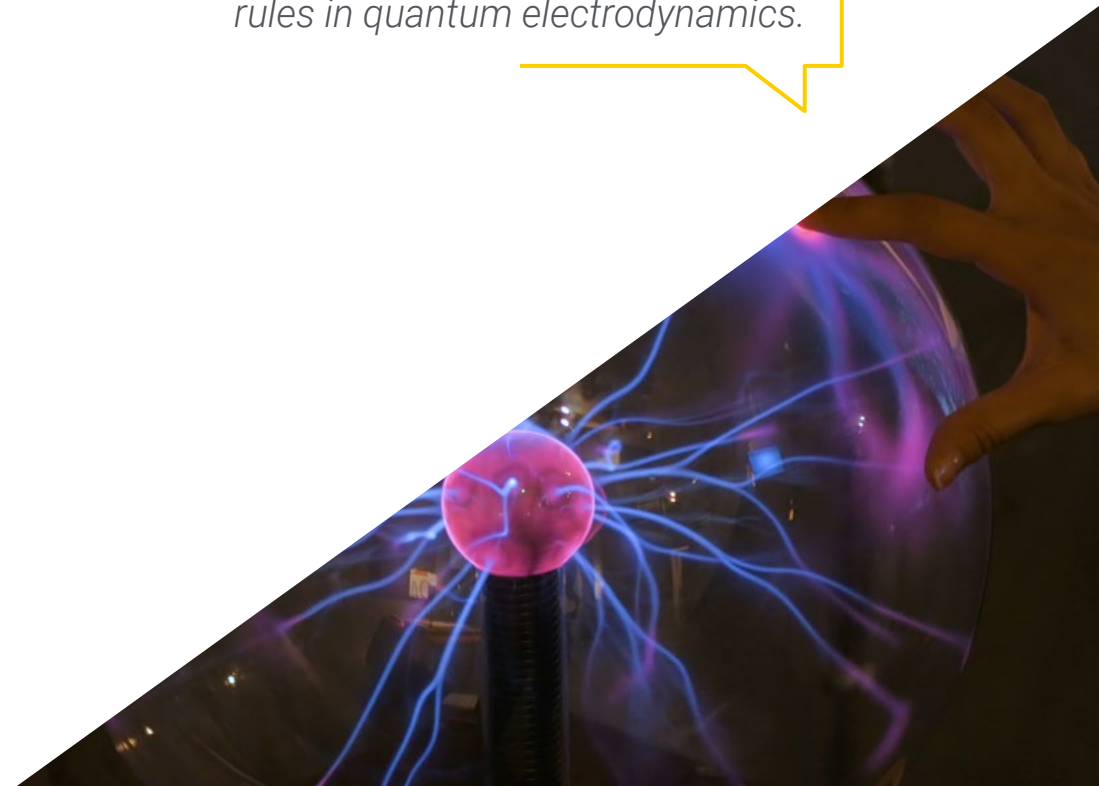
The program's teaching staff includes professionals from the sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will allow professionals to learn in a contextual and situated learning environment, i.e., a simulated environment that will provide immersive education programmed to prepare in real situations.

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

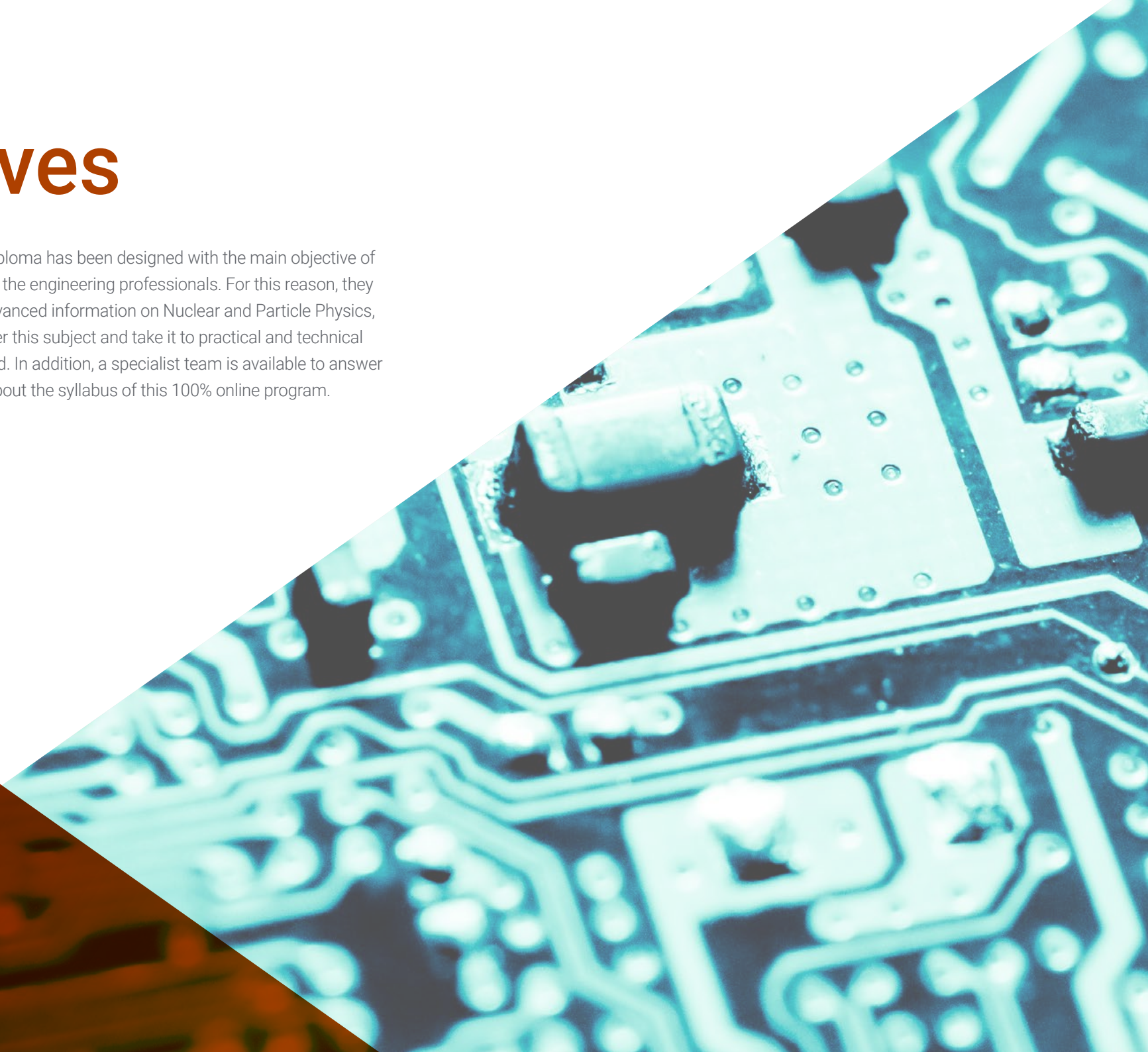
Enroll in a Postgraduate Diploma that will lead you to delve into the theory of relativity, cosmology and thermodynamics of the early universe.

With this academic program you will be able to master Feynman's rules in quantum electrodynamics.



02 Objectives

The syllabus of this postgraduate diploma has been designed with the main objective of boosting the professional careers of the engineering professionals. For this reason, they will obtain the most relevant and advanced information on Nuclear and Particle Physics, with which they will be able to master this subject and take it to practical and technical application from the engineering field. In addition, a specialist team is available to answer any questions students may have about the syllabus of this 100% online program.



“

*Enroll now in a Postgraduate Diploma
that will provide you with the necessary
knowledge in Nuclear and Particle Physics
to progress in the field of engineering”*



General Objectives

- ♦ Acquire basic concepts of astrophysics
- ♦ Obtain basic notions about Feynman diagrams, how they are drawn and their utilities
- ♦ Learn and apply approximate methods to study quantum systems
- ♦ Master the Klein-Gordon, Dirac and electromagnetic fields



With this Postgraduate Diploma, you will delve into Einstein's equations and Schwarzschild's solutions in a much more dynamic way"





Specific Objectives

Module 1. Nuclear and Particle Physics

- ◆ Obtain basic knowledge of nuclear and particle physics
- ◆ Know how to distinguish the different nuclear decay processes
- ◆ Know the Feynman diagrams, their use and how to draw them
- ◆ Know how to calculate relativistic collisions

Module 2. General Relativity and Cosmology

- ◆ Acquire basic notions of general relativity
- ◆ Apply knowledge of calculus and algebra to the study of gravity using the theory of general relativity
- ◆ Know the Einstein's equations in tensor format
- ◆ Acquire basic knowledge of cosmology and the primitive universe

Module 3. High-Energy Physics

- ◆ Apply knowledge of quantum field theory and the mathematics of group and representations theory to elementary particle physics
- ◆ Know the spontaneous symmetry breaking mechanisms and the Higgs mechanism
- ◆ Have notions of neutrino physics, their masses and oscillations
- ◆ Know Feynman's rules for quantum electrodynamics, quantum chromodynamics and weak interaction
- ◆ Acquire Basic Notions of Yang-Mills Theory

04

Structure and Content

This Postgraduate Diploma has been designed to offer in 6 months, the knowledge required to develop your professional career with a solid learning about Nuclear and Particle Physics. Video summaries of each topic, outlines, videos in detail or essential readings are available to facilitate learning and allow you to advance on the essential concepts of this field in a much more natural way.



“

Thanks to the Relearning method you will be able to advance quickly through the content of this syllabus and reduce the long hours of study”

Module 1. Nuclear and Particle Physics

- 1.1. Introduction to Nuclear Physics
 - 1.1.1. Periodic Table of the Elements
 - 1.1.2. Important Discoveries
 - 1.1.3. Atomic Models
 - 1.1.4. Important Definitions Scales and Units in Nuclear Physics
 - 1.1.5. Segré's Diagram
- 1.2. Nuclear Properties
 - 1.2.1. Binding Energy
 - 1.2.2. Semiempirical Mass Formula
 - 1.2.3. Fermi Gas Model
 - 1.2.4. Nuclear Stability
 - 1.2.4.1. Alpha Decay
 - 1.2.4.2. Beta Decay
 - 1.2.4.3. Nuclear Fusion
 - 1.2.5. Nuclear Deexcitation
 - 1.2.6. Double Beta Decay
- 1.3. Nuclear Scattering
 - 1.3.1. Internal Structure: Dispersion Study
 - 1.3.2. Effective Section
 - 1.3.3. Rutherford's Experiment: Rutherford's Effective Section
 - 1.3.4. Mott's Effective Section
 - 1.3.5. Momentum Transfer and Shape Factors
 - 1.3.6. Nuclear Charge Distribution
 - 1.3.7. Neutron Scattering
- 1.4. Nuclear Structure and Strong Interaction
 - 1.4.1. Nucleon Scattering
 - 1.4.2. Bound States Deuterium
 - 1.4.3. Strong Nuclear Interaction
 - 1.4.4. Magic Numbers
 - 1.4.5. The Layered Model of the Nucleus
 - 1.4.6. Nuclear Spin and Parity
 - 1.4.7. Electromagnetic Moments of the Nucleus
 - 1.4.8. Collective Nuclear Excitations: Dipole Oscillations, Vibrational States and Rotational States
- 1.5. Nuclear Structure and Strong Interaction II
 - 1.5.1. Classification of Nuclear Reactions
 - 1.5.2. Reaction Kinematics
 - 1.5.3. Conservation Laws
 - 1.5.4. Nuclear Spectroscopy
 - 1.5.5. The Compound Nucleus Model
 - 1.5.6. Direct Reactions
 - 1.5.7. Elastic Dispersion
- 1.6. Introduction to Particle Physics
 - 1.6.1. Particles and Antiparticles
 - 1.6.2. Fermions and Baryons
 - 1.6.3. The Standard Model of Elementary Particles: Leptons and Quarks
 - 1.6.4. The Quark Model
 - 1.6.5. Intermediate Vector Bosons
- 1.7. Dynamics of Elementary Particles
 - 1.7.1. The Four Fundamental Interactions
 - 1.7.2. Quantum Electrodynamics
 - 1.7.3. Quantum Chromodynamics
 - 1.7.4. Weak Interaction
 - 1.7.5. Disintegrations and Conservation Laws

- 1.8. Relativistic Kinematics
 - 1.8.1. Lorentz Transformations
 - 1.8.2. Quatrivectors
 - 1.8.3. Energy and Linear Momentum
 - 1.8.4. Collisions
 - 1.8.5. Introduction to Feynman Diagrams
- 1.9. Symmetries
 - 1.9.1. Groups, Symmetries and Conservation Laws
 - 1.9.2. Spin and Angular Momentum
 - 1.9.3. Addition of Angular Momentum
 - 1.9.4. Flavor Symmetries
 - 1.9.5. Parity
 - 1.9.6. Load Conjugation
 - 1.9.7. CP Violation
 - 1.9.8. Time Reversal
 - 1.9.9. CPT Conservation
- 1.10. Bound States
 - 1.10.1. Schrödinger's Equation for Central Potentials
 - 1.10.2. Hydrogen Atom
 - 1.10.3. Fine Structure
 - 1.10.4. Hyperfine Structure
 - 1.10.5. Positronium
 - 1.10.6. Quarkonium
 - 1.10.7. Lightweight Mesons
 - 1.10.8. Baryons

Module 2. General Relativity and Cosmology

- 2.1. Special Relativity
 - 2.1.1. Postulates
 - 2.1.2. Lorentz Transformations in Standard Configuration
 - 2.1.3. Impulses (Boosts)
 - 2.1.4. Tensors
 - 2.1.5. Relativistic Kinematics
 - 2.1.6. Relativistic Linear Momentum and Energy
 - 2.1.7. Lorentz Covariance
 - 2.1.8. Energy-Momentum Tensor
- 2.2. Principle of Equivalence
 - 2.2.1. Principle of Weak Equivalence
 - 2.2.2. Experiments on the Weak Equivalence Principle
 - 2.2.3. Locally Inertial Reference Systems
 - 2.2.4. Principle of Equivalence
 - 2.2.5. Consequences on the Equivalence Principle
- 2.3. Particle Motion in the Gravitational Field
 - 2.3.1. Path of Particles under Gravity
 - 2.3.2. Newtonian Limit
 - 2.3.3. Gravitational Redshift and Tests
 - 2.3.4. Temporary Dilatation
 - 2.3.5. Geodesic Equation
- 2.4. Geometry: Necessary Concepts
 - 2.4.1. Two-Dimensional Spaces
 - 2.4.2. Scalar, Vector and Tensor Fields
 - 2.4.3. Metric Tensor: Concept and Theory
 - 2.4.4. Partial Derivative
 - 2.4.5. Covariant Derivative
 - 2.4.6. Christoffel Symbols
 - 2.4.7. Covariant Derivatives of Tensors
 - 2.4.8. Directional Covariant Derivatives
 - 2.4.9. Divergence and Lapacian

- 2.5. Curved Space-Time
 - 2.5.1. Covariant Derivative and Parallel Transport: Definition
 - 2.5.2. Geodesics from Parallel Transport
 - 2.5.3. Riemann Curvature Tensor
 - 2.5.4. Riemann Tensor: Definition and Properties
 - 2.5.5. Ricci Tensor: Definition and Properties
- 2.6. Einstein Equations: Derivation
 - 2.6.1. Reformulation of the Equivalence Principle
 - 2.6.2. Applications of the Equivalence Principle
 - 2.6.3. Conservation and Symmetries
 - 2.6.4. Derivation of Einstein's Equations from the Equivalence Principle
- 2.7. Schwarzschild Solution
 - 2.7.1. Schwarzschild Metrics
 - 2.7.2. Length and Time Elements
 - 2.7.3. Conserved Quantities
 - 2.7.4. Equation of Motion
 - 2.7.5. Light Deflection. Study of Schwarzschild Metrics
 - 2.7.6. Schwarzschild Radius
 - 2.7.7. Eddington-Finkelstein Coordinates
 - 2.7.8. Black Holes
- 2.8. Linear Gravity Limits Consequences
 - 2.8.1. Linear Gravity: Introduction
 - 2.8.2. Coordinate Transformation
 - 2.8.3. Linearized Einstein Equations
 - 2.8.4. General Solution of Linearized Einstein Equations
 - 2.8.5. Gravitational Waves
 - 2.8.6. Effects of Gravitational Waves on Matter
 - 2.8.7. Generation of Gravitational Waves
- 2.9. Cosmology: Introduction
 - 2.9.1. Observation of the Universe: Introduction
 - 2.9.2. Cosmological Principle
 - 2.9.3. System of Coordinates
 - 2.9.4. Cosmological Distances
 - 2.9.5. The Hubble's Law
 - 2.9.6. Inflation

- 2.10. Cosmology: Mathematical Study
 - 2.10.1. Friedmann's First Equation
 - 2.10.2. Friedmann's Second Equation
 - 2.10.3. Densities and Scale Factor
 - 2.10.4. Consequences of Friedmann Equations Curvature of the Universe
 - 2.10.5. Primitive Universe Thermodynamics

Module 3. High-Energy Physics

- 3.1. Mathematical Methods: Groups and Representations
 - 3.1.1. Theory of Groups
 - 3.1.2. $SO(3)$, $SU(2)$ and $SU(3)$ and $SU(N)$ Groups
 - 3.1.3. Lie Algebra
 - 3.1.4. Representations
 - 3.1.5. Multiplication of Representations
- 3.2. Symmetries
 - 3.2.1. Symmetries and Conservation Laws
 - 3.2.2. C, P, T Symmetries
 - 3.2.3. CPT Symmetry Violation and Conservation
 - 3.2.4. Angular Momentum
 - 3.2.5. Addition of Angular Momentum
- 3.3. Feynman Calculus: Introduction
 - 3.3.1. Average Lifetime
 - 3.3.2. Cross Section
 - 3.3.3. Fermi's Golden Rule for Decay
 - 3.3.4. Fermi's Golden Rule for Dispersion
 - 3.3.5. Dispersion of Two Bodies in the Center of Masses of Reference Systems
- 3.4. Application of Feynman Calculation: Toy Model
 - 3.4.1. Toy Model: Introduction
 - 3.4.2. Feynman Rules
 - 3.4.3. Average Lifetime
 - 3.4.4. Dispersion
 - 3.4.5. Higher Order Diagrams

- 3.5. Quantum Electrodynamics
 - 3.5.1. Dirac Equation
 - 3.5.2. Solution for Dirac Equations
 - 3.5.3. Bilinear Covariants
 - 3.5.4. The Photon
 - 3.5.5. Feynman Rules for Quantum Electrodynamics
 - 3.5.6. Casimir Trick
 - 3.5.7. Renormalization
- 3.6. Electrodynamics and Chromodynamics of Quarks
 - 3.6.1. Feynman Rules
 - 3.6.2. Production of Hadrons in Electron-Positron Collisions
 - 3.6.3. Feynman Rules for Chromodynamics
 - 3.6.4. Color Factors
 - 3.6.5. Quark-Antiquark Interaction
 - 3.6.6. Quark-Quark Interaction
 - 3.6.7. Pair Annihilation in Quantum Chromodynamics
- 3.7. Weak Interaction
 - 3.7.1. Weak Charged Interaction
 - 3.7.2. Feynman Rules
 - 3.7.3. Muon Decay
 - 3.7.4. Neutron Decay
 - 3.7.5. Pion Decay
 - 3.7.6. Weak Interaction between Quarks
 - 3.7.7. Weak Neutral Interaction
 - 3.7.8. Electroweak Unification
- 3.8. Gauge Theories
 - 3.8.1. Local Gauge Invariance
 - 3.8.2. Yang-Millis Theory
 - 3.8.3. Quantum Chromodynamics
 - 3.8.4. Feynman Rules
 - 3.8.5. Mass Term
 - 3.8.6. Spontaneous Symmetry Breaking
 - 3.8.7. Higgs Mechanism

- 3.9. Neutrino Oscillation
 - 3.9.1. Solar Neutrino Problem
 - 3.9.2. Neutrino Oscillation
 - 3.9.3. Neutrino Masses
 - 3.9.4. Mixing Matrix
- 3.10. Advanced Topics Brief Introduction
 - 3.10.1. Higgs Boson
 - 3.10.2. Grand Oscillation
 - 3.10.3. Matter-Antimatter Asymmetry
 - 3.10.4. Supersymmetry, Strings and Extra Dimensions
 - 3.10.5. Dark Matter and Energy



An ideal academic option for those who wish to deepen their knowledge on the latest advances in the field of Nuclear and Particle Physics”

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.



“

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.

“

*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

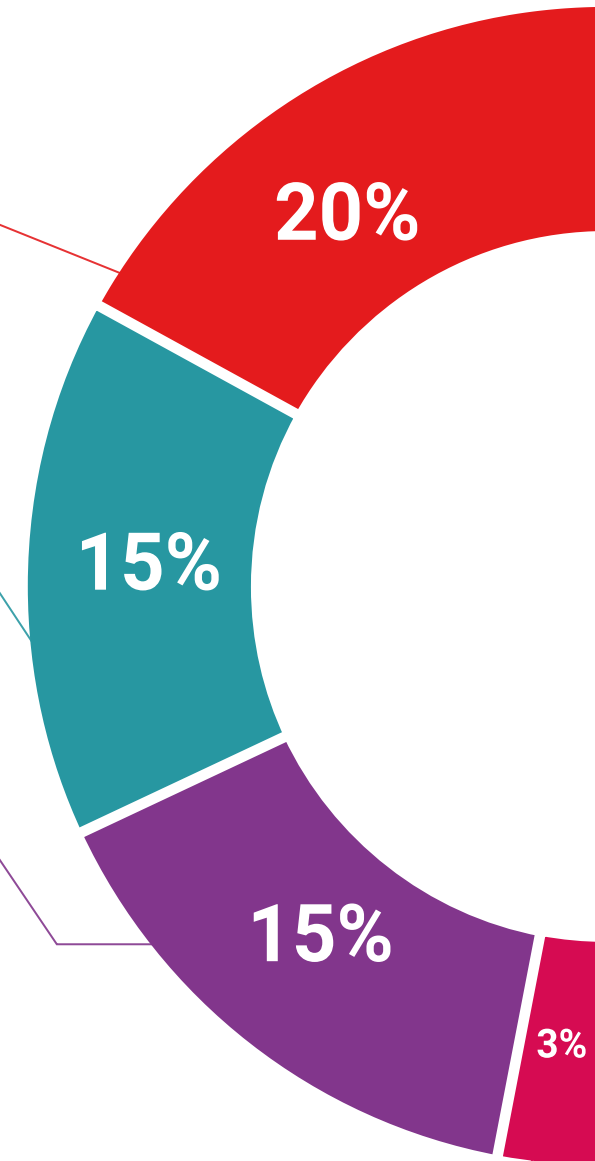
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

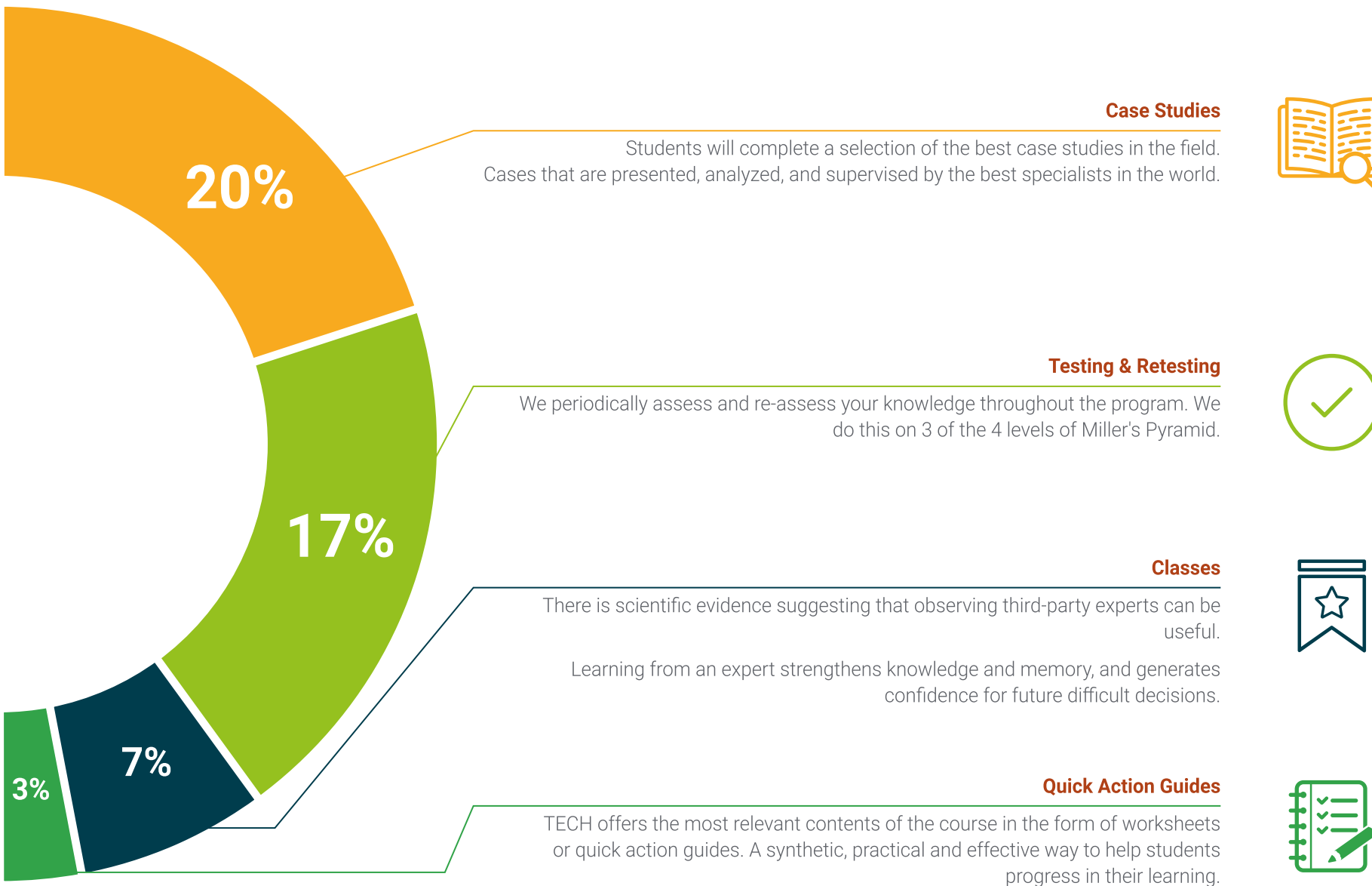
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Additional Reading

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





06 Certificate

The Postgraduate Certificate in Nuclear and Particle Physics guarantees students, in addition to the most rigorous and up-to-date education, access to a diploma for the Postgraduate Certificate issued by TECH Global University.



“

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

This private qualification will allow you to obtain a diploma for the **Postgraduate Diploma in Nuclear and Particle Physics** 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.

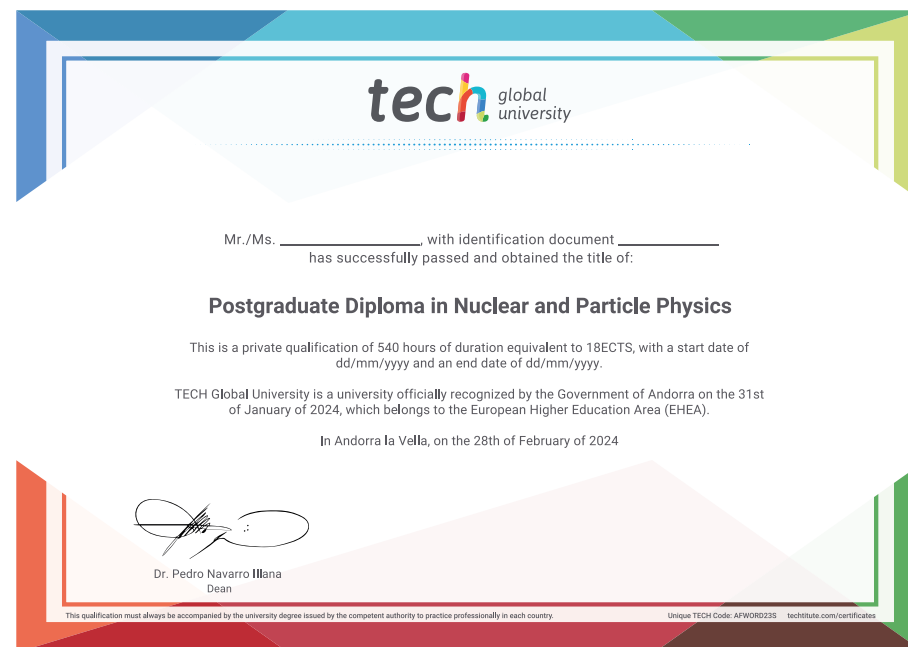
This **TECH Global University** private qualification, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Nuclear and Particle Physics**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**



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

tech global university

Postgraduate Diploma
Nuclear and Particle Physics

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Accreditation: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Postgraduate Diploma Nuclear and Particle Physics

