

# Postgraduate Diploma Blender Modeling





## Postgraduate Diploma Blender Modeling

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

Website: [www.techtitute.com/us/information-technology/postgraduate-diploma/postgraduate-diploma-blender-modeling](http://www.techtitute.com/us/information-technology/postgraduate-diploma/postgraduate-diploma-blender-modeling)

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# 01

# Introduction

Three-dimensional modeling, as well as digital sculpting, are increasingly being developed with specialized tools. These tools include in Substance Painter and Unreal, three of the most widely used by designers to precisely edit objects or sculpt in 3D. The growing influence of 3D design in industrial production, animation or video game development, causes a renewed interest in these programs and therefore interest of also of graphic designers in the specialization of these tools. This online program contains all the knowledge and features necessary to turn the student into a professional using this software.





“

*Specialize your professional career in 3D modeling with Blender, thanks to this TECH's Postgraduate Diploma”*

Blender is one of the most used programs by 3D modelers who have worked on large projects in the world of cinema and video games. This powerful software is complemented by Substance Painter and Unreal. They help sculpt shapes in digital clay, create people from other universes and present a realistic and fluid finish when rendered. In addition, its use is more intuitive than other software, which is why it has been used to create characters such as Baymax from Disney Pixar's Big Hero 6, or to dress Pikachu in the Deadpool costume.

For all these reasons, it is essential for designers who wish to start modeling to have a thorough knowledge of these tools. TECH presents this Postgraduate Diploma, in which students will be able to adapt their learning pace according to their daily activities thanks to the 100% online modality. This will allow you to access content from anywhere in the world and at any time that suits you.

Therefore, you will get to know the Blender tool in detail, learn its interface and handle it like a professional. Then, you will go through an exhaustive review of texturing with Substance Painter, learning about the different methods used to generate greater realism and achieve exceptional 3D modeling. Finally, you will delve into the techniques of exporting to Unreal.

All this content will be accompanied by didactic videos, which will explain the most appropriate ways in which professionals work. In addition to presenting the tricks to sculpt a head, create hair, hair, clothes and others. In short, a complete and up-to-date Postgraduate Diploma, ideal for entering this new industry.

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

- ◆ The development of case studies presented by experts in 3D Modeling with 3D Studio Max
- ◆ The graphic, schematic, and practical contents with which they are created, provide practical information on the 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



*Learn tips and tricks from the pros on character modeling"*

“

*Enroll now in this program and you will have access to the most current and innovative content on Blender modeling”*

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.

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 course. For this purpose, students will be assisted by an innovative interactive video system created by renowned and experienced experts.

*Thanks to the 100% online modality, you will be able to adapt your learning pace without leaving your professional and personal activities.*

*TECH has designed and perfected the Relearning methodology, to allow you to learn in a natural and progressive way, strengthening your skills to face new challenges.*



# 02

# Objectives

The main objective of this Postgraduate Diploma is to learn how to correctly use 3D organic modeling tools with Blender, Substance Painter and Unreal. Therefore, this qualification describes some essential elements to finally be able to create a character or creature model from the beginning to the end. The education developed by TECH is always supported by true professionals in the field in which it is taught. In addition, the knowledge is structured on the basis of labor market requirements in situations as close to reality as possible.







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*TECH designs the study systems so that the knowledge can be achieved within the 6-month period”*



## General Objectives

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- ◆ Know in depth all the steps to create a professional 3D modeling
- ◆ Know and understand in detail how textures work and how they influence modeling
- ◆ Master several programs focused on modeling, texturing and real time used today in the professional world
- ◆ Apply the knowledge acquired in solving modeling problems
- ◆ Learn how to organize and control the time spent on a complete 3D modeling, learning to value their work in the face of possible jobs
- ◆ Get to know the latest updates in the world of modeling and video games, learning about the most updated and used tools of each program
- ◆ Expertly use the knowledge acquired to create your own projects and intelligently add them to your portfolio
- ◆ Develop the resources of each program to achieve the best effect for your modeling
- ◆ Be professionally qualified to organize adequate working time for a job
- ◆ Solve complex problems and make responsible decisions





## Specific Objectives

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### Module 1. 3D Modeling with Blender

- ◆ Learn in detail about the Blender tool, the most used by professionals. Learn about its interface and how to use it for a more professional result in less time
- ◆ Compare each tool with its counterpart in polygonal mode and learn about their benefits
- ◆ Know the tools you will use throughout the 3D modeling process and their optimization
- ◆ Find errors in 3D modeling and know how to solve them in the most intelligent way

### Module 2. Substance Painter Texturing

- ◆ Know in depth the Substance Painter program, the most widely used for texturing in the world of video games today
- ◆ Understand the process of baking from a high resolution model to a low resolution model
- ◆ Know and understand the different layers of a material and how they affect it
- ◆ Create materials from scratch and modify existing materials to achieve a fully customized material
- ◆ Know how to work with mapping coordinates and masks to correctly apply textures to the model
- ◆ Learn about brushes, how to use them and how to create customized brushes
- ◆ Learn how to use program and external resources to enhance textures
- ◆ Know different methods to create or modify textures

### Module 3. Exports to Unreal

- ◆ Handle the real-time Unreal Engine in such a way that it performs perfectly when working with a 3D model and its textures
- ◆ Understand the properties of Unreal materials
- ◆ Know how to work with and understand Unreal material nodes, giving effects to textures to achieve unique materials
- ◆ Correctly light an Unreal scene in a realistic way according to the desired ambience
- ◆ Configure Unreal Lightmaps, achieving better resolution and optimizing engine performance
- ◆ Perform basic post-processing for rendering with good visual effects



*Learn how to use each of the tools that Blender offers so that you can put it into practice in the labor context"*

# 03

# Course Management

This program is designed following the guidelines of a group of experts of the highest prestige. They are working professionals who have dedicated a large part of their careers to develop their texturing technique, continuing at the forefront of the industry and developing their professional practice in the best animation studios and projects of international stature. Thus, through the content they will present and the diverse didactic materials they have developed, the student will receive the most current and requested knowledge of this industry.

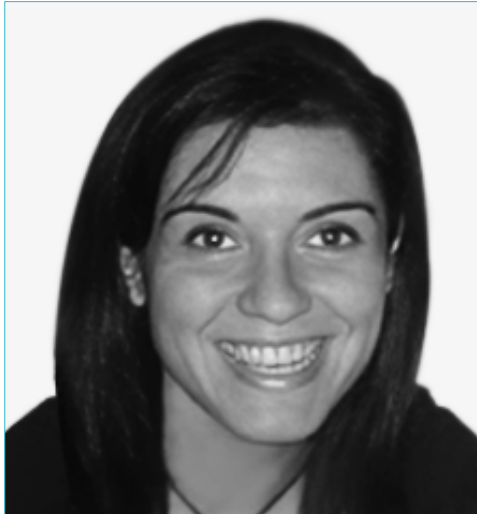




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*You will learn from the best designers and professionals in the industry with vast experience in 3D Modeling”*

## Management



### Dr. Vidal Peig, Teresa

- ◆ Specialist in Arts and Technology (digital art, 2D, 3D, VR and AR)
- ◆ Designer and creator of 2D character sketches for mobile video games
- ◆ Designer at Sara Lee, Motos Bordy, Hebo and Full Gass
- ◆ Teacher and director of Master's Degree in Video Game Programming
- ◆ Professor at the University of Girona
- ◆ PhD in Architecture from the Polytechnic University of Catalonia
- ◆ Degree in Fine Arts from the University of Barcelona

## Professors

### Mr. Alcalde Perelló, Dimas

- ◆ Specialist in artistic creation for video games and applied games
- ◆ Lead artist at BluetechWorlds
- ◆ Teacher in the Artistic creation for videogames and applied games degree, ENTI UB
- ◆ Graduate in Artistic creation for videogames and applied games, Universitat de Barcelona
- ◆ Master's Degree in Teacher Training for Compulsory Secondary Education and Baccalaureate, Vocational Training and Language Teaching by the University of La Rioja UNIR
- ◆ Technician in 3D Animation, Games and Interactive Environments by the Center for Photographic Studies.

### Mr. Llorens Aguilar, Víctor

- ◆ Postgraduate Diploma in 3D Modeling
- ◆ Teacher in courses related to 3D Modeling
- ◆ Scratch teacher in private schools
- ◆ Degree in 3D Animations, Games and Interactive Environments



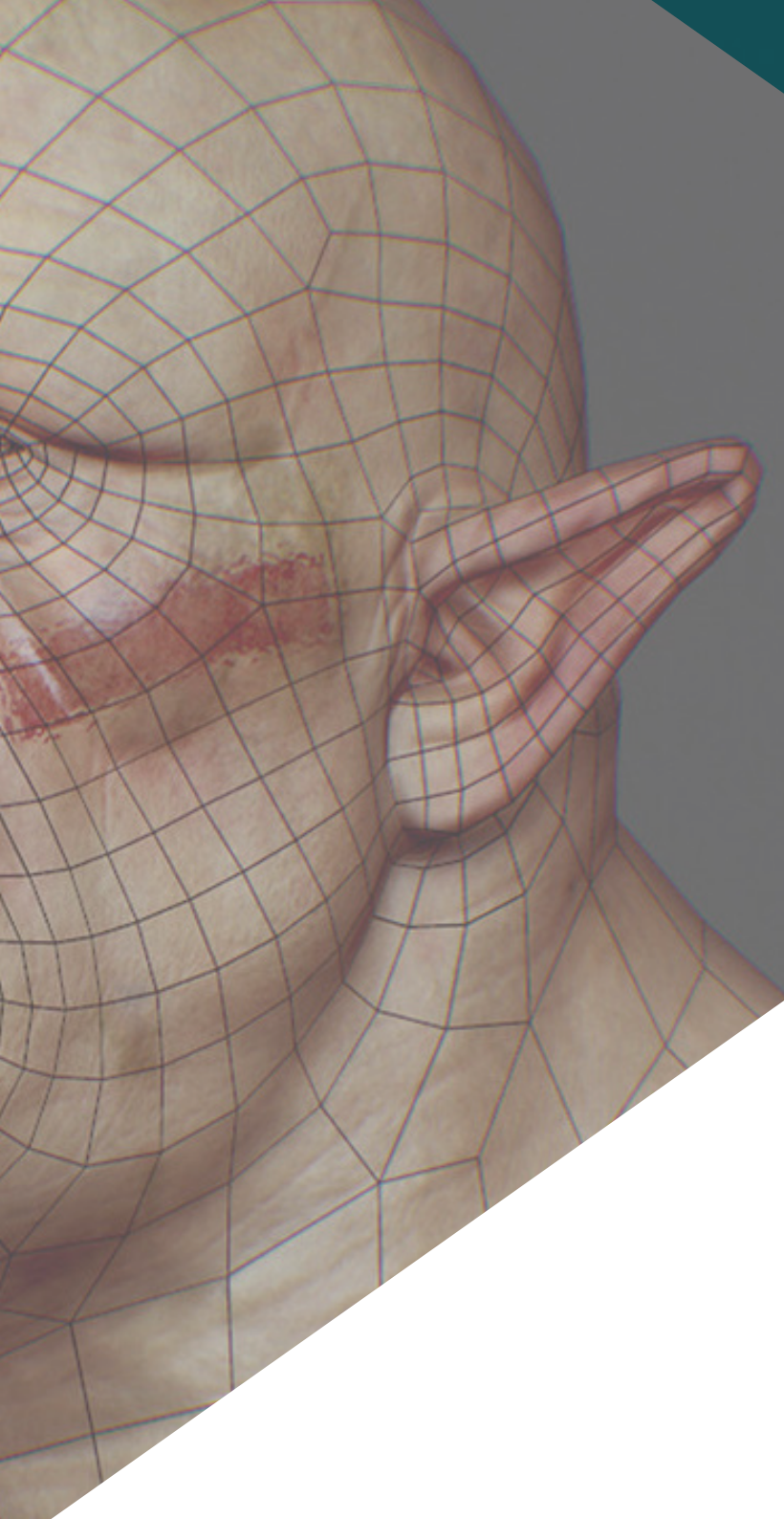
# 04

# Structure and Content

The course management and faculty have designed the structure and content of this Postgraduate Diploma in Blender Modeling to make it more accessible and easier to learn. Its complete and up-to-date syllabus covers all the most relevant aspects such as its interface, various utilities or how to use hardsurface modeling for hard surfaces. All this with the multimedia material innovation and teaching resources continuously available in the virtual classroom.







“

*This Postgraduate Diploma will help you to use the most advanced organic 3D modeling software on the market in only 6 months”*

## Module 1. 3D Modeling with Blender

- 1.1. Interface
  - 1.1.1. Initial Installation and Configuration
  - 1.1.2. Pull-Down Menus and Interface Modes
  - 1.1.3. Navigation in the 3D Environment
- 1.2. Object Creation and Selection
  - 1.2.1. Modifying Basic Topology
  - 1.2.2. Modifying Basic Topology
- 1.3. Edition
  - 1.3.1. Add New Geometry
  - 1.3.2. Modifying Geometries
  - 1.3.3. Modifiers and Mirror
- 1.4. Geometry
  - 1.4.1. Smooth Modifier
  - 1.4.2. Merging and Separating Meshes
  - 1.4.3. Untriangularize
- 1.5. *Edit Mode*
  - 1.5.1. Basic Modeling Units
  - 1.5.2. *Loops*
  - 1.5.3. *Tris and Ngones*
  - 1.5.4. Subdivision - Tool and Modifier
  - 1.5.5. Visibility - Hide and Reveal Objects
  - 1.5.6. *Snap*
  - 1.5.7. Smooth or Flat Preview Modes
- 1.6. Retopology
  - 1.6.1. Conforming One Mesh on Top of Another
  - 1.6.2. Creating Objects Using the 3D Cursor
- 1.7. Organic Model
  - 1.7.1. Shape and Topology
  - 1.7.2. Use of Curves
  - 1.7.3. *Surface and Nurbs*
- 1.8. *Sculpting*
  - 1.8.1. Brushes and Commands
  - 1.8.2. Use of Remesher

- 1.9. Selection
  - 1.9.1. Meshes Selection
  - 1.9.2. Modification of Selections
  - 1.9.3. Selecting by Vertices, Edges or Faces
- 1.10. *Vertex Paint*
  - 1.10.1. Brush Options
  - 1.10.2. Creating IDMaps

## Module 2. Substance Painter Texturing

- 2.1. *Substance Painter*
  - 2.1.1. Create New Project and Reimport Models
  - 2.1.2. Basic Controls and Interface 2D and 3D Views
  - 2.1.3. *Baking*
- 2.2. Baking Layers
  - 2.2.1. *World Space Normal*
  - 2.2.2. *Ambient Occlusion*
  - 2.2.3. *Curvature*
  - 2.2.4. *Position*
  - 2.2.5. ID, Normal, *Thickness*
- 2.3. Layers
  - 2.3.1. Base Color
  - 2.3.2. *Roughness*
  - 2.3.3. *Metallic*
  - 2.3.4. Material
- 2.4. Masks and Generators
  - 2.4.1. Layers and UVs
  - 2.4.2. Masks
  - 2.4.3. Procedural Generators
- 2.5. Base Material
  - 2.5.1. Types of Material
  - 2.5.2. Customized Generators
  - 2.5.3. Creation of a Base Material from Scratch

- 2.6. Brushes
  - 2.6.1. Predefined Parameters and Brushes
  - 2.6.2. Alphas, Lazy Mouse and Symmetry
  - 2.6.3. Create Custom Brushes and Save Them
- 2.7. Particles
  - 2.7.1. Particle Brushes
  - 2.7.2. Properties of Particles
  - 2.7.3. Particles Using Masks
- 2.8. Projections
  - 2.8.1. Preparing Textures
  - 2.8.2. Stencil
  - 2.8.3. Cloning
- 2.9. *Substance Share/Source*
  - 2.9.1. *Substance Share*
  - 2.9.2. *Substance Source*
  - 2.9.3. Textures.com
- 2.10. Terminology
  - 2.10.1. Normal Map
  - 2.10.2. *Acolchado o Sangrado*
  - 2.10.3. *Mipmapping*

## Module 3. Exports to Unreal

- 3.1. *Unreal Engine*
  - 3.1.1. *Game Exporter*
  - 3.1.2. Create New Project and Controls
  - 3.1.3. Importing Models into Unreal
- 3.2. Basic Properties of Materials
  - 3.2.1. Create Materials and Nodes
  - 3.2.2. Constant and Its Values
  - 3.2.3. *Texture Sample*
- 3.3. Common Material Nodes
  - 3.3.1. *Multiply*
  - 3.3.2. *Texture Coordinate*
  - 3.3.3. *Add*
  - 3.3.4. *Fresnel*
  - 3.3.5. *Panner*
- 3.4. Materials and Bloom
  - 3.4.1. *Linear Interpolate*
  - 3.4.2. *Power*
  - 3.4.3. *Clamp*
- 3.5. Textures to Modify the Material
  - 3.5.1. Masks
  - 3.5.2. Transparent Textures
  - 3.5.3. Match Color
- 3.6. Basic Lighting
  - 3.6.1. *Light Source*
  - 3.6.2. *Skylight*
  - 3.6.3. Fog
- 3.7. Fill and Creative Lighting
  - 3.7.1. *Point Light*
  - 3.7.2. *Spot Light and Rect Light*
  - 3.7.3. Objects as Light Sources
- 3.8. Night Lighting
  - 3.8.1. Light Source Properties
  - 3.8.2. Fog Properties
  - 3.8.3. Skylight Properties
- 3.9. *Lightmaps*
  - 3.9.1. Viewer Modes. *Lightmap Density*
  - 3.9.2. Improve Lightmaps Resolution
  - 3.9.3. *Lightmaps Importance Volume*
- 3.10. Rendering
  - 3.10.1. Cameras and Their Parameters
  - 3.10.2. Basic Post-Processing
  - 3.10.3. *High-Resolution Screenshot*

# 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.



“

*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.

“

*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 has been the most widely used learning system among the world's leading Information Technology schools for as long as they have existed. 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 that you are presented with in the case method, an action-oriented learning method. Throughout the course, students 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 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.

This methodology has 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, and financial markets and 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 skills and abilities in each subject 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 program. 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 Diploma in Blender Modeling guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma 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 program will allow you to obtain a **Postgraduate Diploma in Blender Modeling** 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.

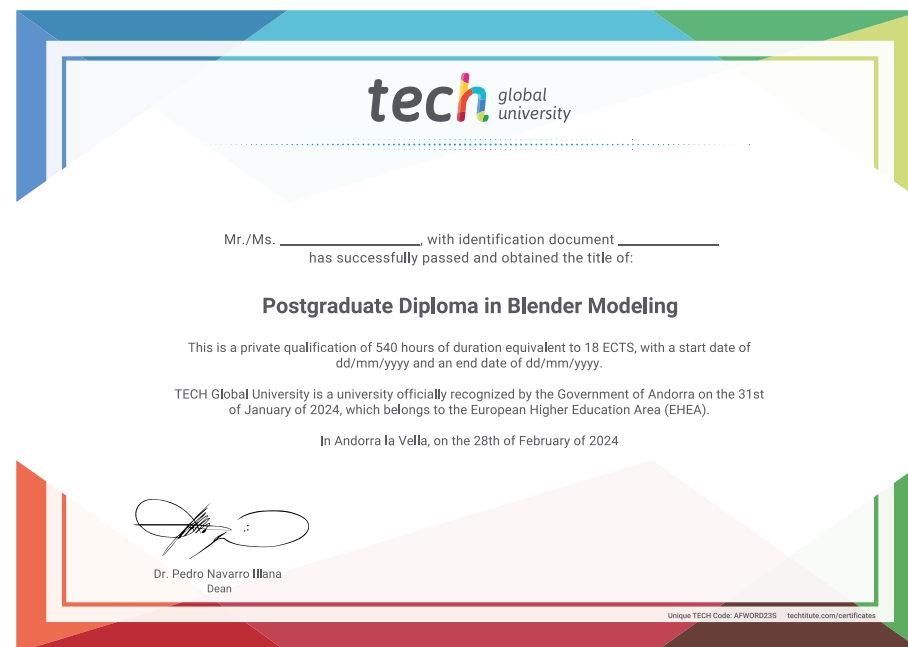
This **TECH Global University title**, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Blender Modeling**

Modality: **Online**

Duration: **6 months.**

Accreditation: **18 ECTS**



\*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 quality  
development languages  
virtual classroom



## Postgraduate Diploma Blender Modeling

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

# Postgraduate Diploma Blender Modeling

