Postgraduate Diploma
Modeling with Blender

tech global university

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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/videogames/postgraduate-diploma/postgraduate-diploma-blender-modeling

Index

01 Introduction — p. 4

02 Objectives — p. 8

03 Course Management — p. 12

04 Structure and Content — p. 16

05 Study Methodology — p. 22

06 Certificate — p. 32

01

Introduction

Blender, Substance Painter and Unreal are the most commonly used tools by designers and 3D modelers to create objects and shapes. Mastery of these tools is essential for any 3D designer, and their use has also expanded and become more accessible in the field of video game image and graphic development. Thanks to this training, the most advantageous features and configurations of these tools are gathered in a fully online program, which provides a progressive journey from the most basic concepts to the more complex ones, ensuring control and proficiency with these tools. The user will gain the necessary skills to create specific models from scratch.

The comprehensive knowledge of Blender and Substance Painter at your fingertips with this Postgraduate Diploma"

The video game industry has undergone a great revolution in recent decades, evolving from flat, 2D graphics to highly realistic designs that leave no user, gamer or otherwise, indifferent. Everyone can appreciate a well-crafted creation. Blender, Substance Painter, and Unreal are the most widely used programs by 3D modelers who have worked on major projects in both the film and video game industries.

These tools help sculpt forms in digital clay, create characters from other worlds, and present a realistic, fluid finish when rendering. Moreover, their use is more intuitive than other software, which is why they have been employed in the creation of characters such as Baymax from Disney Pixar's Big Hero 6 or dressing Pikachu in a Deadpool costume.

Through this Postgraduate Diploma, users will gain in-depth knowledge of Blender, learn its interface, and create models using the software. The program will also delve into advanced techniques for texture creation and the final export of projects to Unreal.

Upon completing this qualification, students will be ready to model a character from scratch and present it to leading studios in the gaming industry. In just 6 months, they will expand their professional growth opportunities.

To achieve this, students will have access to multimedia content, specialized readings, and case studies that offer a more dynamic and accessible learning experience. Additionally, this content will be available on the virtual platform, ready for use whenever needed.

This **Postgraduate Diploma in Modeling with Blender** contains the most complete and up-to-date educational program on the market. Its most notable features are:

- The development of practical cases presented by experts in Modeling with Blender
- 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 3D modeling with Blender and specialize in an indispensable tool in this sector”

TECH has designed and perfected the re-learning and learning-by-doing methodology to allow you to learn progressively while developing your own skills and abilities"

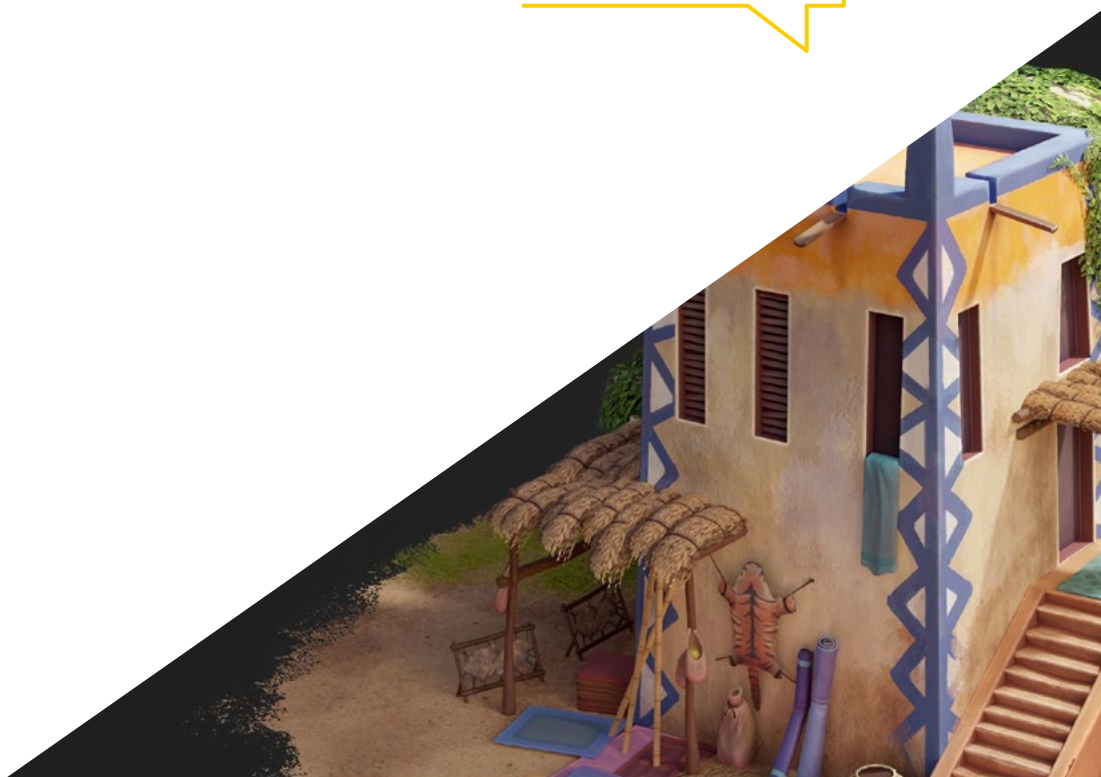
Enroll in this program and access the content whenever you need it, allowing you to progress through the syllabus at your own pace.

Master the most advanced techniques in Substance Painter with this comprehensive study plan.

The program includes, within its teaching staff, industry professionals who share their work experience, as well as recognized specialists from leading organizations 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 experts.



02

Objectives

The goal of this Postgraduate Diploma is to master and control the Blender tool, texturing with Substance Painter, and the exportation of projects to Unreal, all of which are fundamental in 3D modeling of objects and shapes for video games. This study plan provides students with all the knowledge required to handle these interfaces with a high level of expertise. Upon graduation, students will have a competitive advantage in the sector and will be able to undertake significant projects, as well as offer their services as a specialized modeler using these tools.

Enhance your resume and gain a competitive edge in your sector with this specialized training"

General Objectives

- Gain a deep understanding of all the steps involved in creating a professional 3D model
- 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 acquired knowledge to solve problems in 3D modeling
- Learn how to organize and manage time effectively when working on a complete 3D model, while evaluating your work in relation to potential job opportunities
- Stay up-to-date with the latest advancements in the world of modeling and video games, learning to use the most current and widely-used tools in each program
- Expertly use the acquired knowledge to create personal projects and strategically add them to your portfolio
- Develop the resources of each program to achieve the best effect for your modeling
- Be professionally prepared to manage an appropriate work schedule for a job
- Solve complex problems and make responsible decisions

Specific Objectives

Module 1. 3D Modeling with Blender

- Get to know Blender in detail, the most widely used tool by professionals
- Learn its interface and navigate it for more professional results in less time
- Compare each tool with its counterpart in polygonal mode and understand their benefits
- Understand the tools you will use throughout the 3D modeling process and how to optimize them
- Identify errors in 3D models and learn how to fix them in the most efficient way

Module 2. Texturing with Substance Painter

- Gain a deep understanding of Substance Painter, the most widely used tool for texturing in the video game industry today
- Understand the baking process from a high-resolution model to a low-resolution one
- Learn to understand the different layers of a material and how they affect it
- Create materials from scratch and modify existing ones 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 custom ones
- Learn how to use the resources found in the program or externally to improve our textures
- Understand different methods for creating or modifying textures

Module 3. Exports to Unreal

- Manage the Unreal Engine real-time engine in a way that allows smooth work 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
- Properly light a scene in Unreal to achieve a realistic effect based on the desired environment
- Configure Unreal Lightmaps, achieving better resolution and optimizing engine performance
- Perform basic post-processing to create renders with good visual effects

In 3 modules and just 6 months, you can become a true expert in 3D design with Blender Modeling"

03

Course Management

The Postgraduate Diploma in Blender Modeling has been designed by experts in the field, who have a solid professional track record and extensive experience in the industry. These highly valuable professionals offer their knowledge and support to facilitate the learning process for students. Students will be accompanied at all times by the teaching staff, learning not only in a theoretical dimension but also in a practical and professional manner, as they will also develop critical and artistic thinking.

Develop professionally alongside the best experts in 3D modeling with Blender and learn from their extensive experience"

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
- Designers 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

Faculty

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, University of 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

- Expert 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

This Postgraduate Diploma in Modeling with Blender is structured into 3 modules and features a comprehensive and up-to-date program. Additionally, its structure covers all the most relevant aspects for mastering this tool, addressing them progressively. As such, students will explore the interface of this software, texturing with Substance Painter, and the procedures for proper exportation to Unreal. In this way, they will be able to implement their knowledge to create realistic shapes, objects, characters, or hard surfaces. All of this is supported by audiovisual materials, practical exercises, and supplementary guides. .

This Postgraduate Diploma is divided into 3 modules that will take you from the most basic concepts to the most advanced and specific ones, as well as teach you everything you need to know to easily create both organic and inorganic modeling"

Module 1. 3D Modeling with Blender

1.1. Interface
- 1.1.1. Installation and Initial Setup
- 1.1.2. Dropdown Menus and Interface Modes
- 1.1.3. Navigation in the 3D Environment

1.2. Object Creation and Selection
- 1.2.2. Modify Basic Topology
- 1.2.3. Work Modes

1.3. Editing
- 1.3.1. Add New Geometry
- 1.3.2. Modify Geometries
- 1.3.3. Modifiers and Mirror

1.4. Geometry
- 1.4.1. Smooth Modifier
- 1.4.1. Join and Separate Meshes
- 1.4.2. Untriangualize

1.5. Edit Mode
- 1.5.1. Basic Modeling Units
- 1.5.2. Loops
- 1.5.3. Tris and Ngons
- 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. Conform a Mesh onto Another
- 1.6.2. Creating Objects Using the 3D Cursor

1.7. Organic Modeling
- 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 the Remesher

1.9. Selection
- 1.9.1. Mesh Selection
- 1.9.2. Modify Selections
- 1.9.3. Select by Vertices, Edges, or Faces

1.10. Vertex Paint
- 1.10.1. Brush Options
- 1.10.3. Create ID Maps

Module 2. Texturing with Substance Painter

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. Custom Generators
- 2.5.3. Creating 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. Creating Custom Brushes and Saving Them

2.7. Particles
- 2.7.1. Particle Brushes
- 2.7.2. Particle Properties
- 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. *Padding or Bleed*
- 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 y 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

39. Lightmaps
- 3.9.1. Viewer Modes. *Lightmap Density*
- 3.9.2. Improve Lightmaps Resolution
- 3.9.3. *Lightmass Importance Volume*

3.10. Rendering
- 3.10.1. Cameras and Their Parameters
- 3.10.2. Basic Post-Processing
- 3.10.3. *High-Resolution Screenshot*

Open new possibilities in your professional career with this updated academic program"

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.

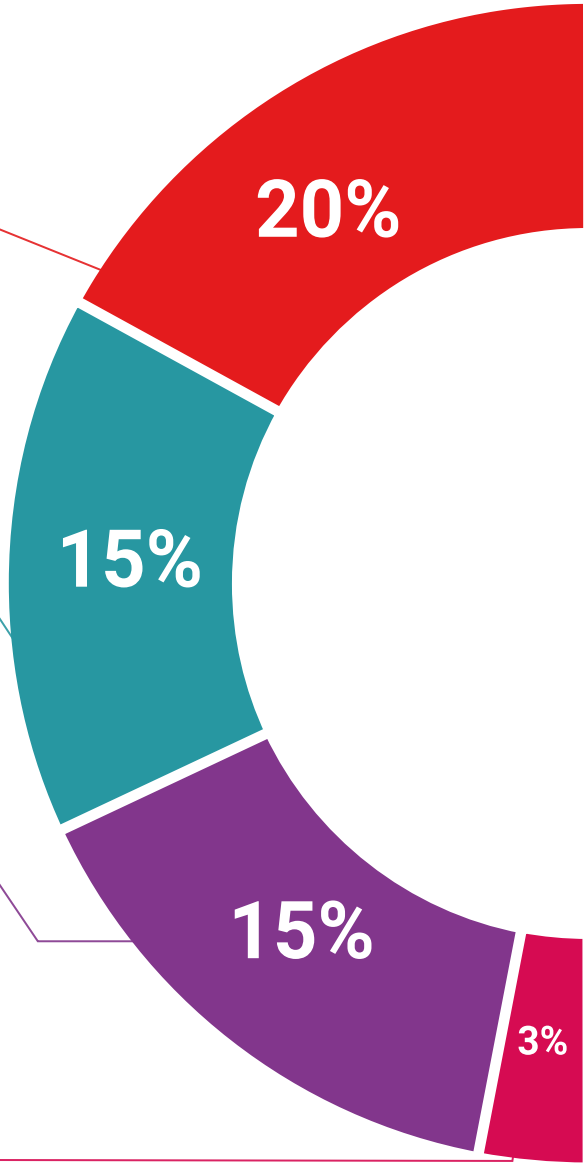
Interactive Summaries

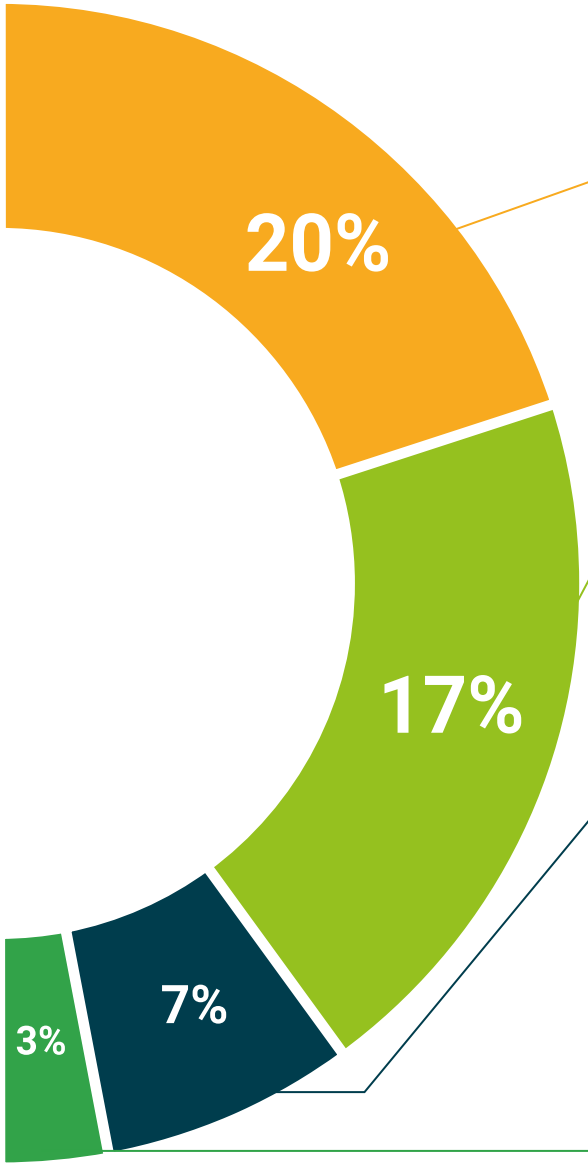
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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.





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

This Postgraduate Diploma in Modeling with Blender guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma 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 **Postgraduate Diploma in Modeling with Blender** 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.

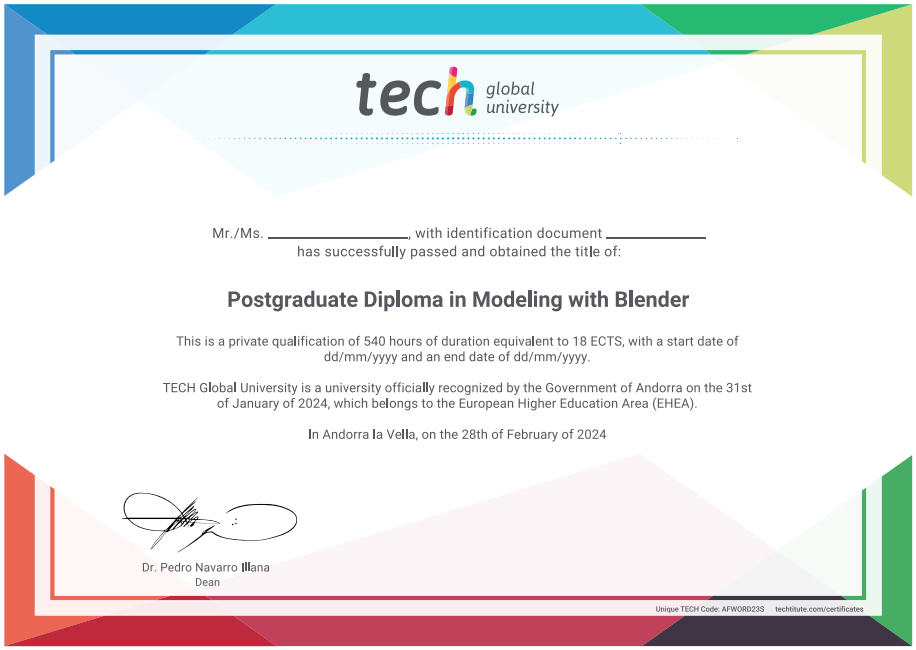
This **TECH Global University** private qualification is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Modeling with Blender**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**


tech global university

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Postgraduate Diploma in Modeling with Blender

This is a private qualification of 540 hours of duration equivalent to 18 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Dean

Unique TECH Code: AFWORD23S techtitute.com/certificates

*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.

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