

Postgraduate Diploma 3D Rendering





Postgraduate Diploma 3D Rendering

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

Website: www.techtitute.com/us/design/postgraduate-diploma/3d-rendering

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01

Introduction

Within the new technologies in the world of design, rendering is one of the most used techniques due to its multiple uses. Its applications are varied and can be used in architecture as well as in advertising. Therefore, it is necessary to have designers who are able to generate a realistic image of the models they make. In this program, students will learn the different ways to perform a *Render*, using some of the most relevant software such as Substance Painter or Zbrush. All this content will be presented by experts in the sector and in a 100% online format.





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Learn how to use the Autodesk engine to make a hyper-realistic rendering, thanks to the updated content of this program"

3D Rendering refers to a type of graphic representation in which a 3D image is taken and an optical effect is achieved that shows a realistic version, with depth and texture. In sectors such as architecture, it allows to show the details as close to reality as possible, almost like a photograph, making it easier to present the design to the client. On the other hand, in animation, it allows to soften the textures and show the public closer or more attractive characters or scenarios.

For all these reasons, TECH presents this Postgraduate Diploma, in which students can acquire the knowledge they need to develop professionally as expert designers in 3D Rendering. First of all, they will delve into the use of Marmoset, a pioneering software in the world of digital sculpture, as it uses its own materials to generate a more realistic result. Then they will be able to perform a *rendering* in other programs such as Substance Painter or Zbrush.

In a following module, the process of rendering a 3D model using the V-Ray engine of 3DS Max will be addressed. Here you will learn how to run basic settings to create convenient lights, handle nodes and some tricks to improve modeling without having to change geometry. Finally, the project will be transferred to the real-time Unreal Engine, which is considered the best program in its category.

All this content will be available 100% online, allowing students to access it at any time, without having to pause their daily activities. They will also be provided with various materials and practical exercises to familiarize themselves with the use of these softwares and use them with greater fluency in their daily work. In short, a complete and up-to-date program, ideal for entering this new sector.

This **Postgraduate Diploma in 3D Rendering** contains the most complete and up-to-date program on the market. The most important features include:

- ◆ The development of case studies presented by rendering experts
- ◆ 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 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
- ◆ Content that is accessible from any fixed or portable device with an Internet connection



Thanks to this program you will be able to position the lights of your projects to create a suitable environment for the model"

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Thanks to the 100% online mode of this program you will be able to organize your time and learning pace at your convenience"

The program's teaching staff includes professionals from the industry who contribute their work experience to this 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 course. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

The Relearning methodology allows you to learn in a practical and simple way, strengthening your skills to accept new professional challenges.

Achieve job independence by taking this program focused on the 3D Rendering process in different areas of design.



02 Objectives

Given the multiple applications of 3D Rendering in the world of design, this Postgraduate Diploma aims to provide students with the knowledge and tricks they need to specialize in this area. This way, they will be able to know in depth the materials and rendering tool of the Marmoset Toolbag program, widely used by 3D modelers and sculptors. Thanks to this, they will be able to go from flat figures to realistic works to include them in their portfolio or to present them to their future clients.





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Through practical exercises you will be able to familiarize yourself with the most used software to achieve 3D Rendering”



General Objectives

- ◆ Know in depth all the steps to create a 3D modeling of a professional's own
- ◆ Know and understand in detail how textures work and how they influence on the modeling
- ◆ Master several programs focused on modeling, texturing and real time used today in the professional world
- ◆ Apply the knowledge acquired in the resolution of problems of a modeling
- ◆ 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
- ◆ 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

Module 1. Rendering

- ◆ Know in depth the materials and rendering tool of the Marmoset Toolbag program, widely used by 3D modelers and sculptors
- ◆ Understand how to position lights to create an appropriate environmental setting
- ◆ Create and position cameras to achieve a perspective that makes 3D modeling more interesting
- ◆ Export professional renderings
- ◆ Basic knowledge of a camera animation to create an animated render to achieve more effects
- ◆ Know the up-to-date tools of the programs
- ◆ Know how to perform a basic rendering with other programs, such as Iray, Zbrush, Photoshop and Keyshot

Module 2. Rendering with V-Ray Engine in 3DS Max

- ◆ In-depth knowledge of the Vray engine assigned to the 3DS Max program
- ◆ Configure rendering options to assign the ideal rendering engine
- ◆ Get to know V-Ray's own materials and work with them through nodes
- ◆ Migrate textures created in Substance Painter to V-Ray engine
- ◆ Configure the lighting of our V-Ray scene
- ◆ Give more details to our model without the need to change or add geometry
- ◆ Intelligently position our model and camera to create an interesting scene
- ◆ Make static and animated renders of 3D modeling

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



In this Postgraduate Diploma you will have several didactic videos that will show you the 3D Rendering process step by step"

03

Course Management

The teachers in charge of this program have several years working as designers, so they know perfectly the advances of their profession and, of course, the most relevant tricks to perfectly master each software in this area. This makes them the most suitable to teach the contents of this Postgraduate Diploma. In addition, they will also provide the student with all the pedagogical materials that will make it easier to understand each theoretical aspect of the syllabus.





Learn together with a group of professionals of the highest level in the world of 3D design"

Management



Ms. 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 Professional Master's Degree in Video Game Programming
- ◆ Teacher at the University of Girona
- ◆ PhD in Architecture from the Polytechnic University of Catalonia
- ◆ Bachelor of Fine Arts from the University of Barcelona

Professors

Ms. Jiménez Vaquero, Laura

- ◆ Organic and props modeler, grooming, texturing and shading artist
- ◆ Organic and Inorganic 3D modeler at Utopia Avatars at EGO W3RLD
- ◆ Development of 3D hard surface modeling for advertising campaigns at Kutuko Studio
- ◆ Development of organic modeling for advertising campaign at Nein Club
- ◆ Development of 3D modeling for interior design at Miltidesign
- ◆ Realization and coordination of the women's collective exhibition "Femenino plural"
- ◆ Image work for 2D animation "Naturaleza Encendida" at the Royal Botanical Garden of Madrid
- ◆ Graduated in Fine Arts at the Complutense University of Madrid
- ◆ Professional Master's Degree in Organic Modeling by Lightbox Academy



04

Structure and Content

This program in 3D Rendering contains a complete syllabus related to this fundamental design process. Therefore, students will delve into each step of the creation, export and completion of a project using the most cutting-edge engines and software of today. All this, thanks to the *Relearning* methodology implemented by TECH, which provides students with the most current theoretical content of the academic panorama together with powerful and practical audiovisual material.





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With this complete program you will be able to perfectly handle one of the most relevant design engines of today: Unreal Engine”

Module 1. Rendering

- 1.1. Marmoset Toolbag
 - 1.1.1. Geometry Preparation and FBX Formatting
 - 1.1.2. Basic Concepts. Importance of Geometry
 - 1.1.3. Links and Materials
- 1.2. Marmoset Toolbag Sky
 - 1.2.1. Environmental Setting
 - 1.2.2. Lighting Points
 - 1.2.3. Lights outside Sky
- 1.3. Marmoset Toolbag Details
 - 1.3.1. Shadows and Pose
 - 1.3.2. Procedural Materials
 - 1.3.3. Channels and Reflection
- 1.4. Real-Time Rendering with Marmoset Toolbag
 - 1.4.1. Image Export with Transparency
 - 1.4.2. Interactive Export. Marmoset Viewer
 - 1.4.3. Film Export
- 1.5. Marmoset Toolbag Animated Cameras
 - 1.5.1. Model Preparation
 - 1.5.2. Cameras
 - 1.5.3. Main Camera Interactive Animation
- 1.6. Marmoset Toolbag Advanced Animated Cameras
 - 1.6.1. Adding New Cameras
 - 1.6.2. Parametric Animation
 - 1.6.3. Final Details
- 1.7. Marmoset Toolbag 4 Raytrace
 - 1.7.1. *Subsurface*
 - 1.7.2. *Ray Tracing*
 - 1.7.3. Adding Cameras and Map Rendering
- 1.8. Substance Painter Rendering IRay
 - 1.8.1. IRay Settings
 - 1.8.2. *Viewer Settings*
 - 1.8.3. *Display Settings*

- 1.9. Rendering with ZBRush
 - 1.9.1. Material Settings
 - 1.9.2. BPR *Render* and Lights
 - 1.9.3. BPR Masks and Final Rendering in Photoshop
- 1.10. Keyshot Rendering
 - 1.10.1. From Zbrush to Keyshot
 - 1.10.2. Materials and Lighting
 - 1.10.3. Photoshop Compositing and Final Image

Module 2. Rendering with V-Ray Engine in 3DS Max

- 2.1. V-Ray *Render Engine* Assignment
 - 2.1.1. Preparation of the *Rendering Space*
 - 2.1.2. *Render Setup* Options and Assign *Render*
 - 2.1.3. Optimize *Rendering Time*
- 2.2. Lighting and Light Creation
 - 2.2.1. 3-Point Lighting
 - 2.2.2. Light Setup
 - 2.2.3. *Render Region*
- 2.3. Creation and Application of Materials
 - 2.3.1. V-Ray Materials
 - 2.3.2. V-Ray Materials Settings
 - 2.3.3. *Self-Illumination*
- 2.4. From Substance Painter to V-Ray
 - 2.4.1. Connect Nodes and Material Settings
 - 2.4.2. Export Presets
 - 2.4.3. Set Up Smart Material in V-Ray
- 2.5. Details and Positioning in the Scene
 - 2.5.1. Application of Shades According to the Position of the Model
 - 2.5.2. Adjust Model and Silhouette
 - 2.5.3. Metallic Base
- 2.6. Surface Rounding
 - 2.6.1. V-RayEdgeTex
 - 2.6.2. Functionality and Setup
 - 2.6.3. Rendering With and Without Rounding

- 2.7. Field of View
 - 2.7.1. Camera and Shot
 - 2.7.2. Camera Aperture
 - 2.7.3. Field of View
- 2.8. Ambient Occlusion and Global Illumination
 - 2.8.1. GI and *Render* Elements
 - 2.8.2. V-RayExtraTex and V-RayDirt
 - 2.8.3. Global Illumination Multiplier
- 2.9. Rendering of a Static Frame
 - 2.9.1. Adjust *Render* Values
 - 2.9.2. Save Final Render
 - 2.9.3. Composition of *Ambient Occlusion*
- 2.10. Rendering of a Sequence
 - 2.10.1. Camera Animation
 - 2.10.2. Rendering Options for Sequence
 - 2.10.3. Frame Assembly for the Sequence

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. *Spotlight* and *Rectlight*
 - 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. *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*

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 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

This Postgraduate Diploma in 3D Rendering guarantees, 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 3D Rendering** endorsed by TECH Global University, the largest digital university in the world.

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 educational framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of joint tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

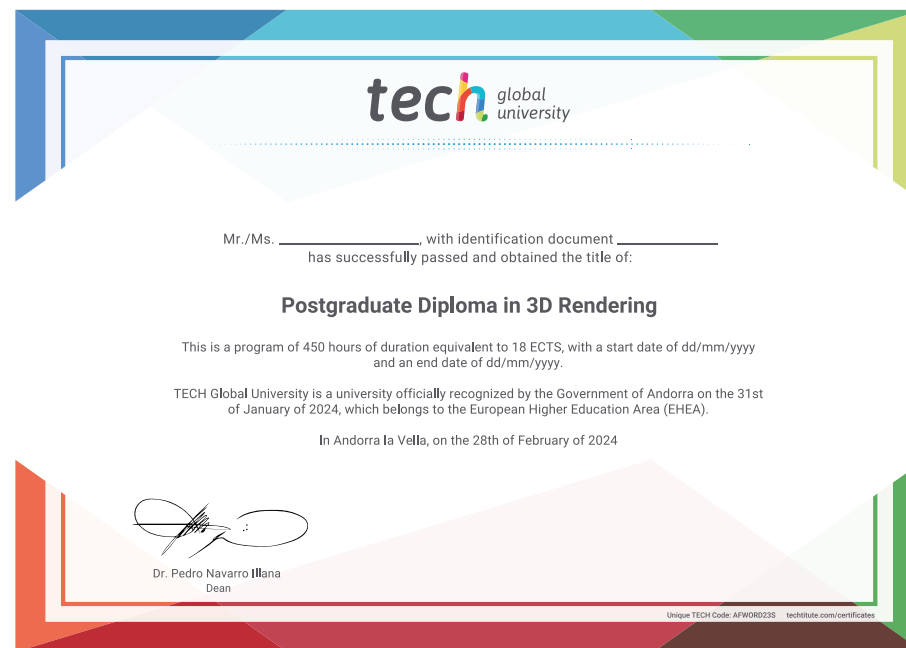
This **TECH Global University** title is a European program of continuous education and professional updating that guarantees the acquisition of competencies in its area of knowledge, conferring a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in 3D Rendering**

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 make the necessary arrangements to obtain it, at an additional cost.

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



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