Postgraduate Diploma
3D Rendering

tech global university

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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/information-technology/postgraduate-diploma/postgraduate-diploma-3d-rendering**

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01
Introduction

The 3D rendering process is perhaps one of the most evolved in the technological fields of design that require it. Thanks to the rendering of an image, a video, an animation or any specific design, a lighter element is achieved, although of high quality. This greatly optimizes the files and makes it possible to continue to evolve software and hardware for better tools. Of course, it can be used in any design, such as, for example, for architecture, 3D printing, animation or video game production, etc.

With this syllabus, the student will learn how to render with some of the most relevant software such as Substance Painter or Zbrush. All this content will be taught by a faculty made up of experts in the field and in a completely online modality.

Become an expert in the 3D Rendering process, as well as in the state-of-the-art tools used for this activity"

3D Rendering 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, but keeping a lightweight file that is easy to continue editing. It is a process that is performed at the end of each model or design, so it is essential to learn how to render correctly regardless of the field to which the design is dedicated.

TECH Global University has developed this Postgraduate Diploma in response to the demand for professional experts in 3D Rendering, making a journey through a syllabus in which students can acquire the knowledge required to develop professionally as an expert designer in rendering. First of all, the Marmoset Toolbag tool is explained: a pioneer software in the world of digital sculpture. In addition to explaining other remarkable programs such as Substance Painter or Zbrush.

Another block will cover the process of rendering a 3D model with the VRay engine of 3DS Max. It will also teach how to run the basic configuration to create and pose lights at convenience, manage nodes and some tricks to improve the modeling without having to change the geometry. The last section is dedicated to exporting in the Unreal Engine, a tool that has been of great application in the design of video games, but whose use has been popularized to other sectors of design.

This content will be available in full online format, allowing the student access to the virtual platform and thereby making it possible to balance other personal or professional projects with this program. Students will be constantly provided with a variety of materials and exercises, as well as the support of an expert teaching staff.

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 practical cases 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 work

◆ Content that is accessible from any fixed or portable device with an Internet connection

"

Learn how to Render with VRay engine in 3DS Max and how to make exports with Unreal Engine"

"*Learn how to run basic setup to create convenient lights, manage nodes and some tricks to improve modeling without having to change the geometry of a design*"
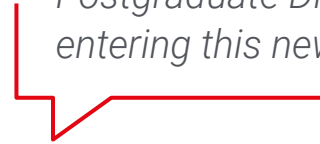
A complete and up-to-date Postgraduate Diploma, ideal for entering this new industry.

Thanks to the online modality of this Postgraduate Diploma, you will be able to organize your time and learning pace at your own 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.

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.

02
Objectives

This Postgraduate Diploma has one main goal: that the professionals learn how to give a correct finish to their three-dimensional modeling. This is achieved with a good rendering process. Therefore, this educational plan contemplates the use of several programs focused on modeling, texturing and real time used today in the professional world, as well as favors the development of a professional and critical point of view, which requires to be professionally qualified to self-manage projects and professional challenges.

Learn how to give a professional and expert finish to three-dimensional modeling"

General Objectives

- Gain in-depth knowledge about 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
- Know 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

Module 1. Rendering

- Get to know in depth the materials and rendering tool of the Marmoset Toolbag program, widely used by 3D modelers and sculptors
- Understand how to position the lights to create a suitable ambient environment for our model
- Create and position cameras to achieve a perspective that makes our 3D modeling more interesting
- Export professional renderings
- Acquire basic knowledge of a camera animation to create an animated render to achieve more effects
- Know the up-to-date tools of the programs
- Get to know how to perform a basic rendering with other programs, such as IRay, Zbrush, Photoshop and Keyshot

Module 2. Rendering with VRay Engine in 3DS Max

- In-depth knowledge of the Vray engine assigned to the 3DS Max program
- Configure the rendering options to assign the desired rendering engine
- Get to know VRay's own materials and work with them through nodes
- Migrate textures created in Substance Painter to VRay engine
- Configure the lighting of our VRay 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
- Perform static and animated renders of our model

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

This Postgraduate Diploma is delivered with Relearning and Learning by Doing methodology to promote the autonomous learning of the students"

03
Course Management

The teachers in charge of this program are experts of great renown, who have designed this program following the demands and requirements of the current market. The cutting-edge teachers who deliver the program provide digital artists with the necessary skills to become specialists in modeling, texturing and rendering. Their guidance in creating the syllabus prepares students for a changing and growing design landscape. The student will receive the most current and sought after knowledge in the industry.

" *Qualified teachers have designed this program with your professional growth and expansion in mind*"

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 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

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 collective exhibition "Femenino plural"
- Image work for 2D animation"Naturaleza Encendida" at the Royal Botanical Garden of Madrid
- Degree in Fine Arts from the Complutense University of Madrid
- Master's Degree in Organic Modeling by Lightbox Academy

Structure and Content

Throughout the 6 months of the Postgraduate Diploma, students will have access to a complete syllabus in relation to this fundamental process of design and, in addition, they will delve into each step of the creation, export and completion of a project using the most cutting-edge engines and software of today. The structure and approach of the contents of this program are designed to provide the digital artist with multiple knowledge about the Rendering process. Through this syllabus, which combines the most up-to-date techniques and the best software in the field, the user's skills and abilities will be polished.
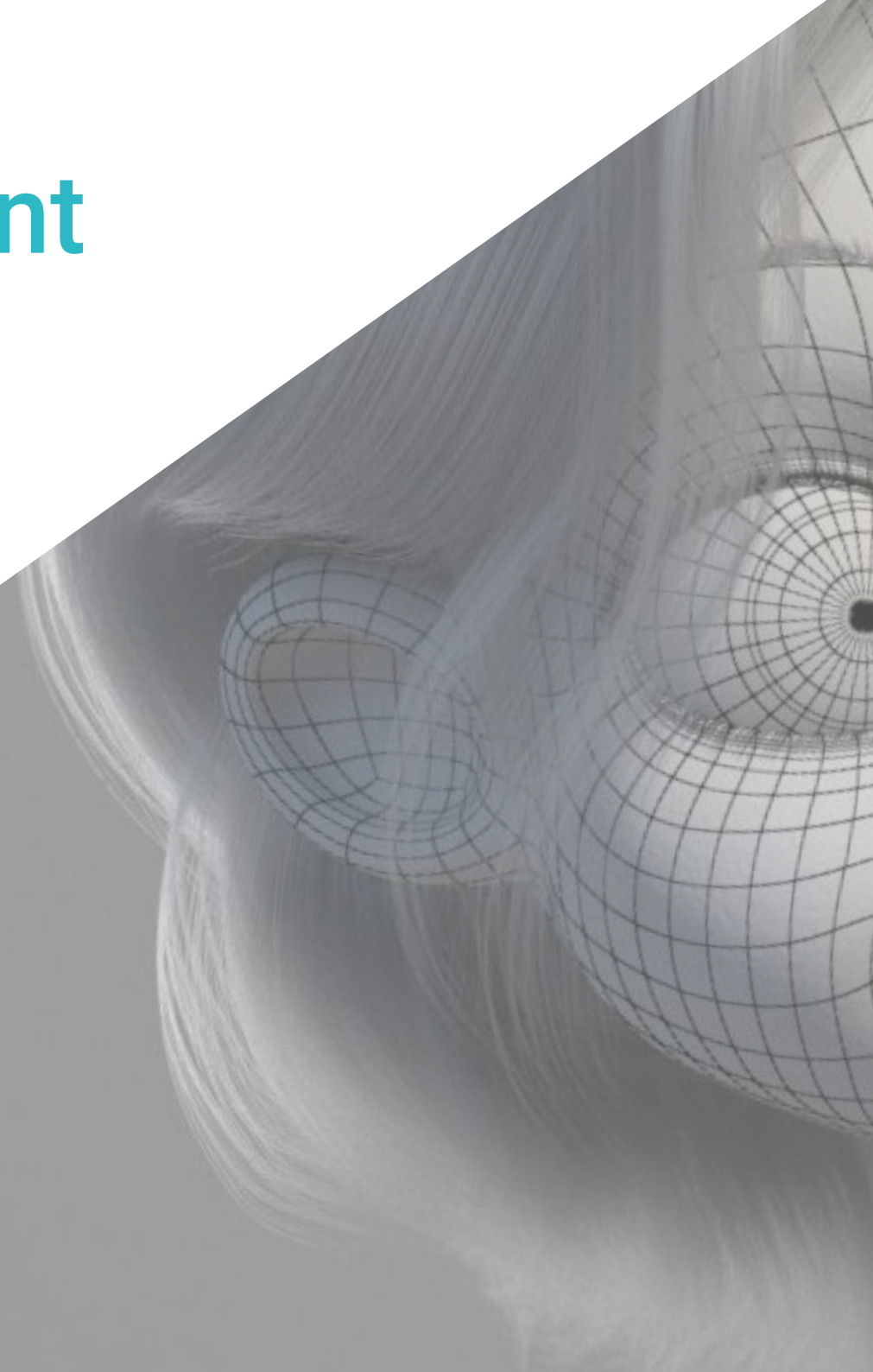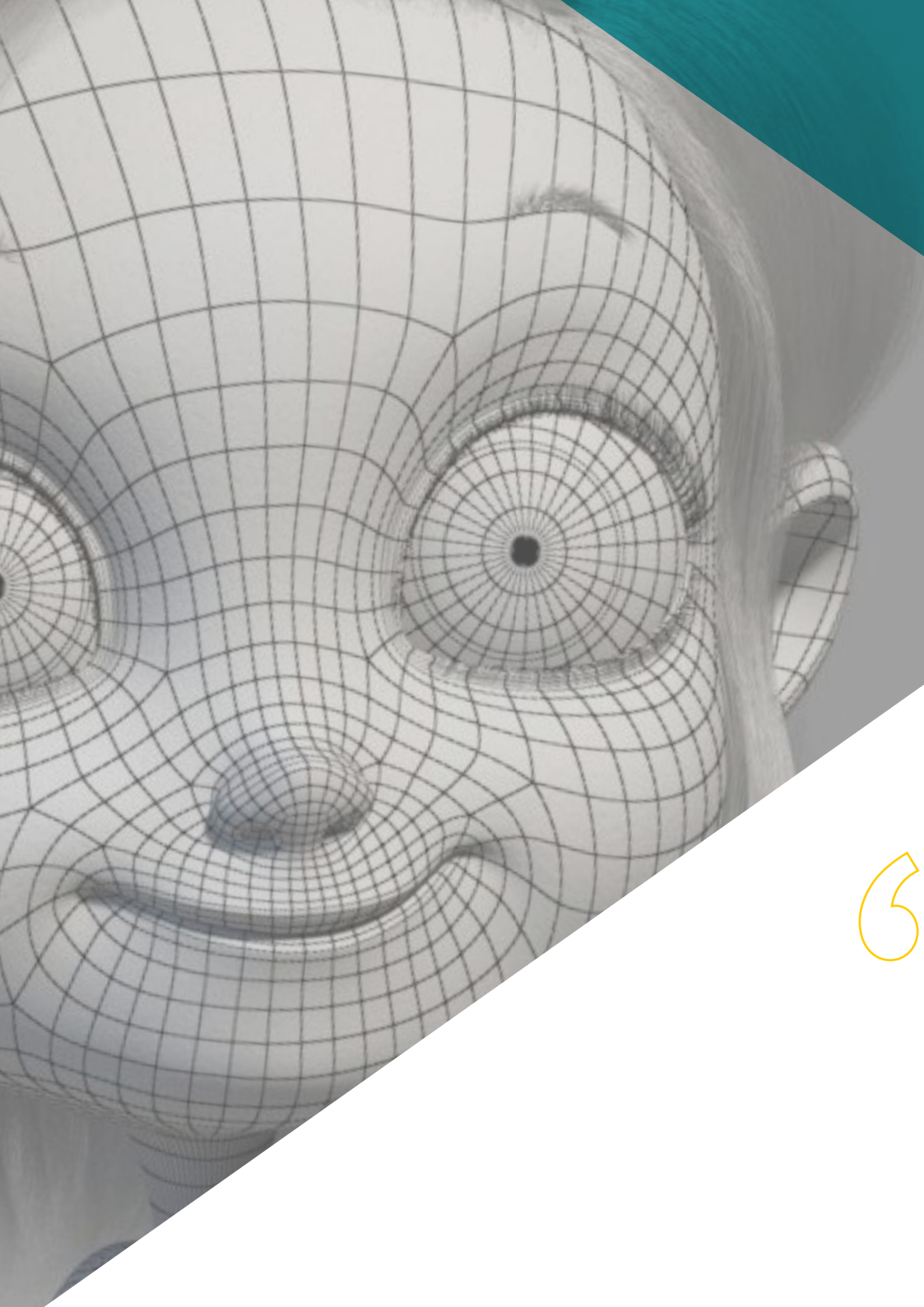
This Postgraduate Postgraduate Diploma is endorsed by the best professionals in the industry and guarantees a large-scale professional growth"

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.   Add 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.   Rendering with Substance Painter. IRay
  1.8.1.   IRay configuration
  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 VRay Engine in 3DS Max

2.1.   VRay 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.   VRay Materials
  2.3.2.   VRay Materials Settings
  2.3.3.   Self-Illumination
2.4.   From Substance Painter to VRay
  2.4.1.   Connect Nodes and Material Settings
  2.4.2.   Export Presets
  2.4.3.   Set Up Smart Material in VRay
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.   VRayEdgeTex
  2.6.2.   Functionality and Setup
  2.6.3.   Rendering With and Without Rounding

Module 3. Exports to Unreal

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.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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.

30%

10%

8%

20%

25%

4%

3%

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 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 program will allow you to obtain a **Postgraduate Diploma in 3D Rendering** 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 3D Rendering**

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 3D Rendering

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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