

Postgraduate Certificate 3D Design for Video Games



Postgraduate Certificate 3D Design for Video Games

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Credits: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtitute.com/us/videogames/postgraduate-certificate/3d-design-video-games

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01

Introduction

Nowadays, the world of video games cannot be understood without a 3D environment. Virtually any device is capable of playing a game with a 3D environment, from smartphones to the most powerful equipment, so it has become an indispensable discipline in the industry. Taking into account this circumstance, TECH has developed this complete program in 3D design to specialize the student in this branch of design. It specializes students in the most modern modeling techniques in the industry, while instructing them in the efficient use of advanced 3D design tools.





“

It's time to translate your most striking ideas into a 3D environment. Learn all the secrets of Maya, Blender and ZBrush with this Postgraduate Certificate in 3D Design for Videogames”

Graphics technology in video games is advancing in leaps and bounds, with engines and processing capabilities that a few years ago seemed unrealistic. Therefore, the demands on 3D design departments have also increased, being able to model and create mappings full of detail and almost realistic characters.

In an environment that is evolving at such a rapid pace, it is necessary for 3D design technicians to constantly update their knowledge, learning new rendering and texturing methods that can save them precious working time. TECH has brought together the best experts in 3D design to develop this Postgraduate Certificate, where the student is instructed in the efficient use of the specific tools of 3D modeling to update their knowledge to the latest trends.

Upon graduation, the student will be able to model complex shapes in programs such as Maya, Blender or ZBrush. You will also have the necessary skills to tackle 3D texturing with Substance Designer, Substance Painter and Substance Alchemist, knowing how to choose which tool to use for each moment and situation.

In addition, the Postgraduate Certificate is taught completely online, so the student is not restricted to fixed schedules or the need to physically go to a center. All content is available from the moment of enrollment, so students can plan their study and exams at their own pace.

The **Postgraduate Certificate in 3D Design for Video Games** contains the most complete and up-to-date educational program on the market. The most important features include:

- ◆ Exhaustive learning of all the tools and processes of 3D Design for Video Games
- ◆ Content with strong audiovisual support, facilitating the acquisition of the knowledge taught in the course
- ◆ Special attention to numerous practical exercises, with which to self assess learning
- ◆ Modern and innovative methodologies adapted to the current trends in the industry
- ◆ A syllabus prepared by experts in the field
- ◆ Content that is accessible from any fixed or portable device with an Internet connection



Improve your knowledge in 3D Design and broaden your future prospects with this Postgraduate Certificate that will make you an expert in 3D modeling"

“

You already have the creativity to be the best 3D designer, you just need the right tools and techniques that will save you valuable work time”

The teaching staff of this program includes professionals from the industry, who contribute the experience of their work to this program, in addition to recognized specialists from reference 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 learning 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 throughout the program. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

With your perseverance and the specialization in 3D Design that this Postgraduate Certificate offers you, you will be able to enter the most reputable studios in the industry.

You've been marveling at the environments and characters you play with for a long time. Now it's time for you to take the reins and be the one to amaze other players around the world.



02 Objectives

The Postgraduate Certificate in 3D Design for Video Games aims to provide the student with all the skills necessary in the daily work of a 3D graphic designer. To this end, the best tools on the market are taught, including Blender, Maya and ZBrush, as well as different texturing programs from the Adobe suite. The program also focuses on the most advanced processing techniques to help the student become more efficient and competent.





“

TECH has brought together the best experts in 3D Design for Video Games so you can learn how to become one of them”



General Objectives

- ◆ Introduce 3D Design in Video Games and its relevance to the industry
- ◆ Learn the efficient use of the main 3D modeling tools: Maya, Blender y ZBrush
- ◆ Train in 3D texturing with programs such as Substance Designer, Substance Painter and Substance Alchemist
- ◆ Understand the different rendering techniques and how to use them optimally





Specific Objectives

- ◆ Analyze the history of 3D in computers and how it was implemented in video games
- ◆ Gain in depth knowledge in the philosophy of the different modeling programs and the projects that can be carried out with them
- ◆ Differentiate between the 3D texturing software and under which circumstances to use each one
- ◆ Know in depth all rendering techniques and the different processes to optimize them

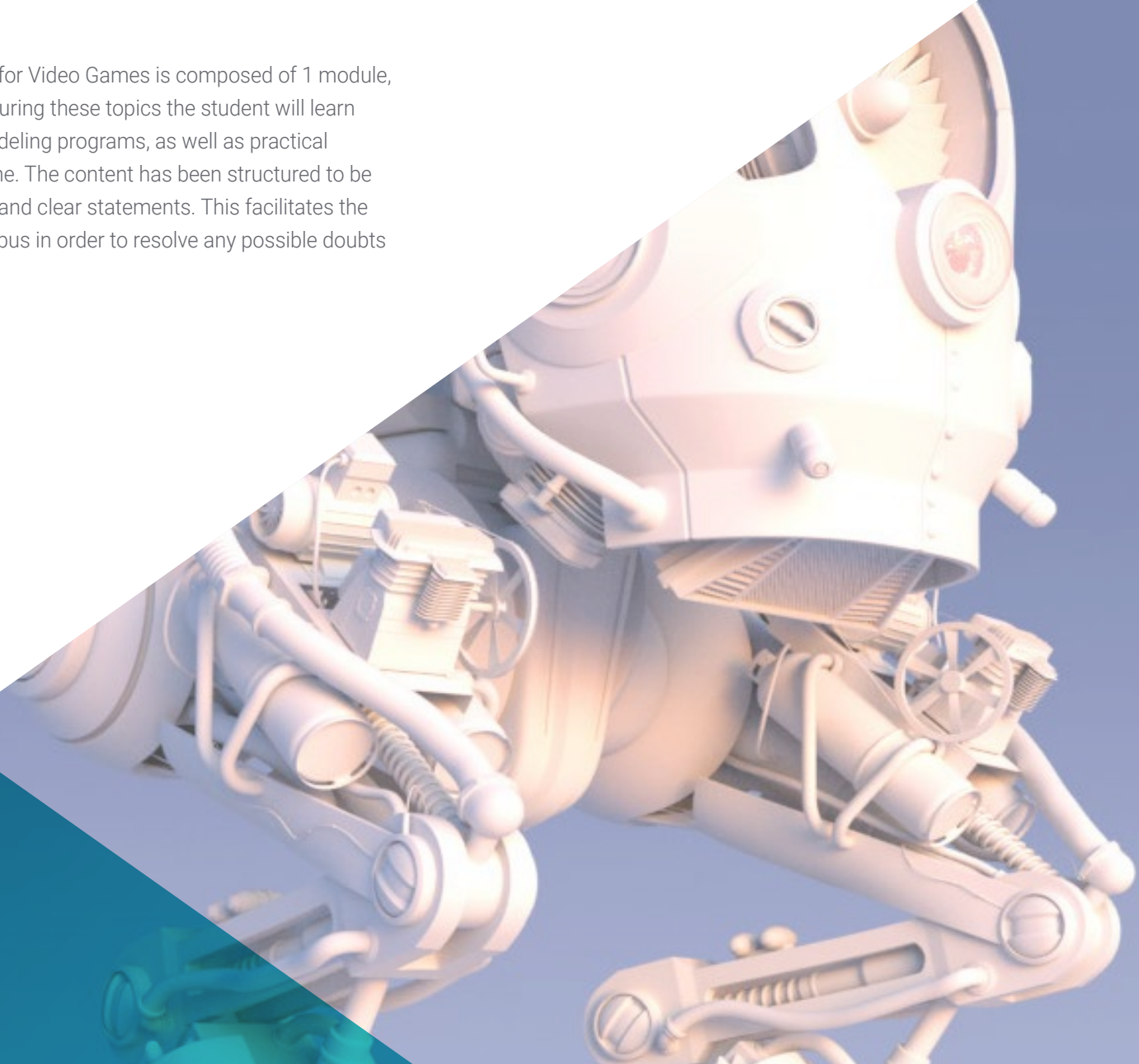
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If you have difficulties in translating your ideas into three-dimensional environments, this Postgraduate Certificate in 3D Design for Video Games will give you all the keys to clear any doubts you may have”

03

Structure and Content

The Postgraduate Certificate in 3D Design for Video Games is composed of 1 module, which includes 10 independent subjects. During these topics the student will learn the design philosophy behind the main modeling programs, as well as practical examples of projects carried out in each one. The content has been structured to be easily accessible to the learner, with direct and clear statements. This facilitates the subsequent consultation of the entire syllabus in order to resolve any possible doubts in this regard.





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With the knowledge this program puts at your fingertips, you'll be able to model, render and texture anything you can imagine”

Module 1. 3D Design for Video Games

- 1.1. 3D in Video Games: Why It Is Important?
 - 1.1.1. History of 3D Computer Vision
 - 1.1.2. Implementation of 3D in Video Games
 - 1.1.3. Techniques for 3D Optimization in Video Games
 - 1.1.4. Interaction Between Graphics Software and Game Engines
- 1.2. 3D Modeling: Maya
 - 1.2.1. Maya Philosophy
 - 1.2.2. Maya Skills
 - 1.2.3. Projects Carried Out with Autodesk Maya
 - 1.2.4. Introduction to Modeling Tools, Rigging, Texturing, etc.
- 1.3. 3D Modeling: Blender
 - 1.3.1. Blender Philosophy
 - 1.3.2. Past, Present or Future
 - 1.3.3. Projects Done with Blender
 - 1.3.4. Blender Cloud
 - 1.3.5. Introduction to Modeling Tools, Rigging, Texturing, etc.
- 1.4. 3D Modeling: ZBrush
 - 1.4.1. ZBrush Philosophy
 - 1.4.2. Integration of ZBrush in a Production Pipeline
 - 1.4.3. Advantages and Disadvantages of Blender
 - 1.4.4. Analysis of Designs Carried out in ZBrush
- 1.5. 3D Texturing: Substance Designer
 - 1.5.1. Introduction to Substance Designer
 - 1.5.2. Philosophy of Substance Designer
 - 1.5.3. Substance Designer in the Video Games Production
 - 1.5.4. Interaction between Substance Designer and Substance Painter
- 1.6. 3D Texturing: Substance Painter
 - 1.6.1. Why Use Substance Painter?
 - 1.6.2. Substance Painter and its Standardization
 - 1.6.3. Substance Painter and Stylized Texturing
 - 1.6.4. Substance Painter and Realist Texturing
 - 1.6.5. Analysis of Texturized Models





- 1.7. 3D Texturing: Substance Alchemist
 - 1.7.1. What is Substance Alchemist?
 - 1.7.2. Workflow of Substance Alchemist
 - 1.7.3. Alternatives to Substance Alchemist
 - 1.7.4. Examples of Projects
- 1.8. Rendering: Texture Mapping and Baking
 - 1.8.1. Introduction to Texture Mapping
 - 1.8.2. Mapping of UVs
 - 1.8.3. Optimization of UVs
 - 1.8.4. UDIMs
 - 1.8.5. Integrations with Texturized Software
- 1.9. Rendered: Advanced Lighting
 - 1.9.1. Lighting Techniques
 - 1.9.2. Contrast Balance
 - 1.9.3. Color Balance
 - 1.9.4. Lighting in Video Games
 - 1.9.5. Resource Optimization
 - 1.9.6. Pre-Rendered Lighting vs. Real-Time Lighting
- 1.10. Rendering: Scenes, Render Layers and Passes
 - 1.10.1. Use of Scenes
 - 1.10.2. Use of Render Layers
 - 1.10.3. Use of Passes
 - 1.10.4. Integration of Passes in Photoshop



Show the world your talent and learn how to model the protagonists of the most successful Video Games”

04

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 business 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. Over the course of 4 years, you will be presented with multiple practical case studies. You will have to combine all your knowledge, and research, argue, and defend your 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.

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.



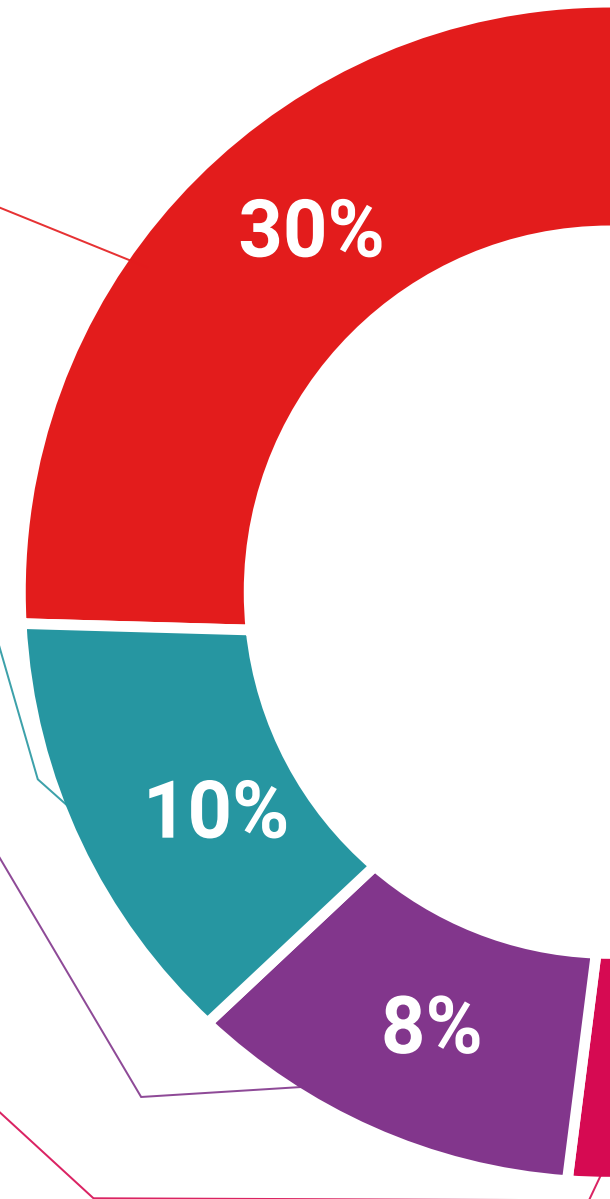
Practising Skills and Abilities

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 we live in.



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.



05 Certificate

The Postgraduate Certificate in 3D Design for Video Games guarantees students, in addition to the most rigorous and up to date education, access to a Postgraduate Certificate 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 your **Postgraduate Certificate in 3D Design for Video Games** 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.

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Duration: **6 weeks**

Accreditation: **6 ECTS**





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