

# Postgraduate Certificate

## Advanced 3D Techniques for Professional Video Games



## Postgraduate Certificate Advanced 3D Techniques for Professional Video Games

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

Website: [www.techtute.com/us/design/postgraduate-certificate/advanced-3d-techniques-professional-video-games](http://www.techtute.com/us/design/postgraduate-certificate/advanced-3d-techniques-professional-video-games)

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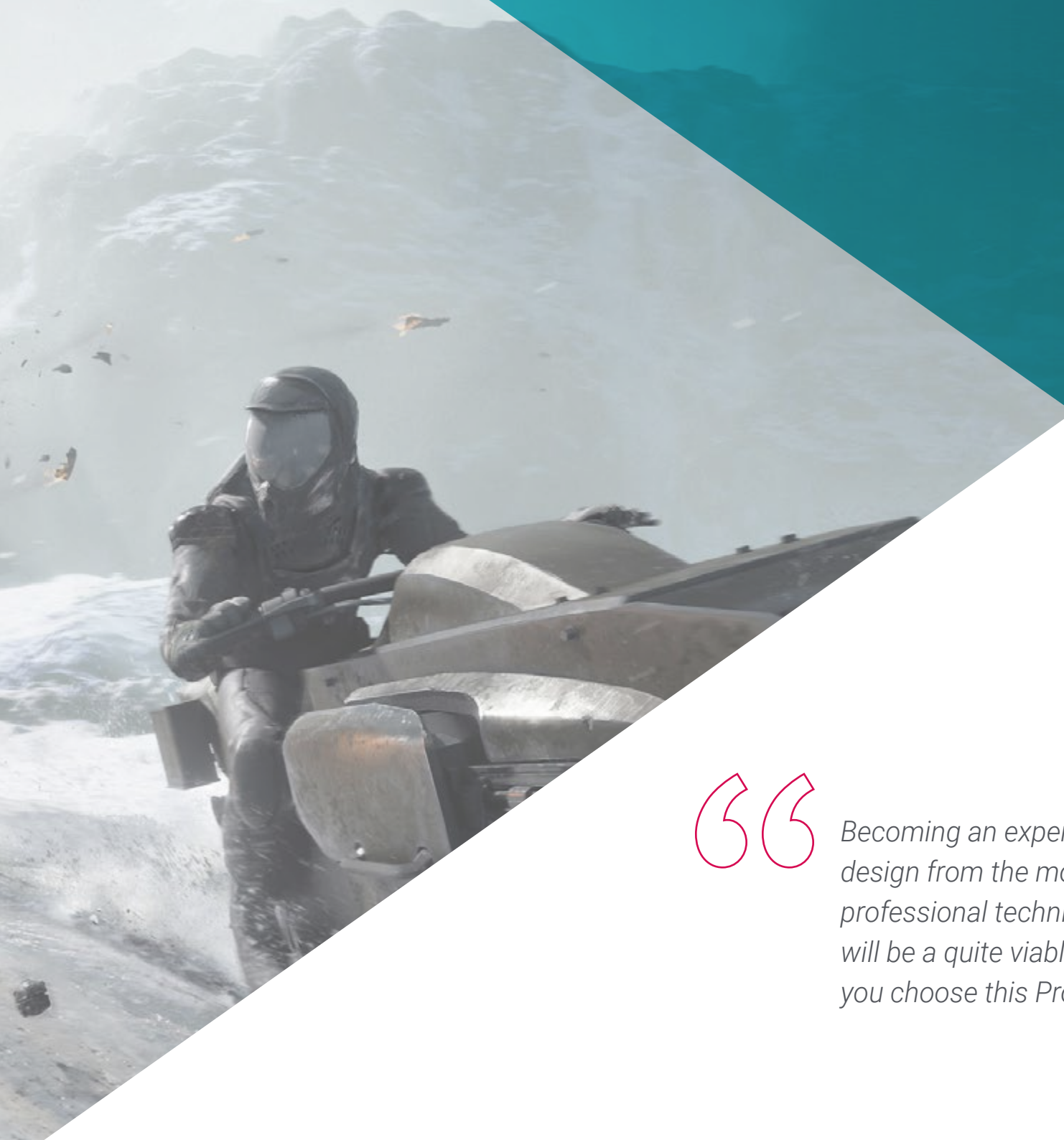
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# 01

# Introduction

dimensional geometry has become one of the main Strategies in today's technological development. To this end, design professionals invest hundreds of hours in creating specific characters and scenarios using the most advanced techniques, achieving increasingly realistic and immersive finishes for players. However, this practice requires a specialized and broad knowledge of the most effective software and the best creative strategies, something that the graduate will be able to focus on with the course of this program. This is a 100% online degree that includes 180 hours of the best theoretical, practical and additional content and with which professionals in this area will be able to perfect their skills and abilities in the advanced design of professional video games through Unreal Engine and the most innovative modeling and *Sculpting* strategies.





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*Becoming an expert in 3D video game design from the most advanced professional techniques and strategies will be a quite viable option for you if you choose this Program”*

Mastery of *Texturing*, *Sculpting* and the main 3D modeling techniques has become a skill in high demand by the digital and video game industry. The development of technology has brought with it endless creative possibilities, but it has made the process of designing characters, scenarios and interfaces a complex task that only specialists in this sector can carry out.

For this reason, having an advanced knowledge of the main tools for the creation of *Gaming* projects, as well as the exhaustive handling of the best 3D software such as Unreal Engine or Zbrush, is a trump card that the professional in this area can use to make his way in a booming industry such as video games. And in order to facilitate specialization, TECH has developed this austere, dynamic and innovative program.

This is a 100% online academic experience through which the graduate will be able to keep up to date with the advances that have been made in this field, being able to implement the most innovative and avant-garde retopology and posing techniques in their professional praxis. In addition, the program delves into the keys to a more optimized export of resources, focusing on the use of the main programs for this purpose.

It also includes hours of high quality additional material to contextualize the information developed in the syllabus and to deepen in a personalized way in the different sections. All this content will be available on the virtual campus from the beginning of the academic experience. Therefore, the graduate will be able to organize themselves perfectly, being able to combine the course of this degree with any work activity.

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

- ◆ The development of practical cases presented by experts in Video Games and Video Technologies
- ◆ 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
- ◆ Special emphasis on 3D modeling and animation in virtual environments
- ◆ 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



*You will work with the most innovative academic technology to improve your digital Sculpting skills for Gaming projects”*

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*A program created by specialists in the Gaming design sector with which you will be able to perfect your 3D Texturing skills 100% online”*

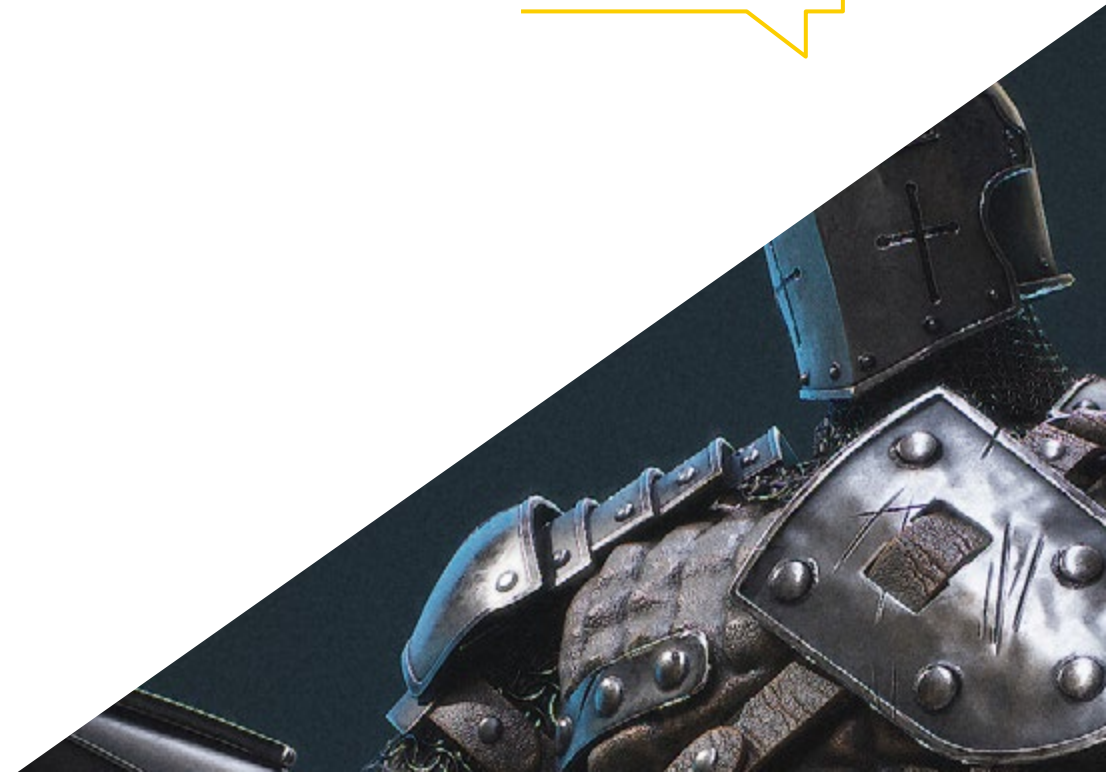
*It is a program that you can want, wherever you want and through any device with an internet connection.*

*You will learn the main modeling techniques, as well as the keys to carry out advanced mapping of 3D objects.*

The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

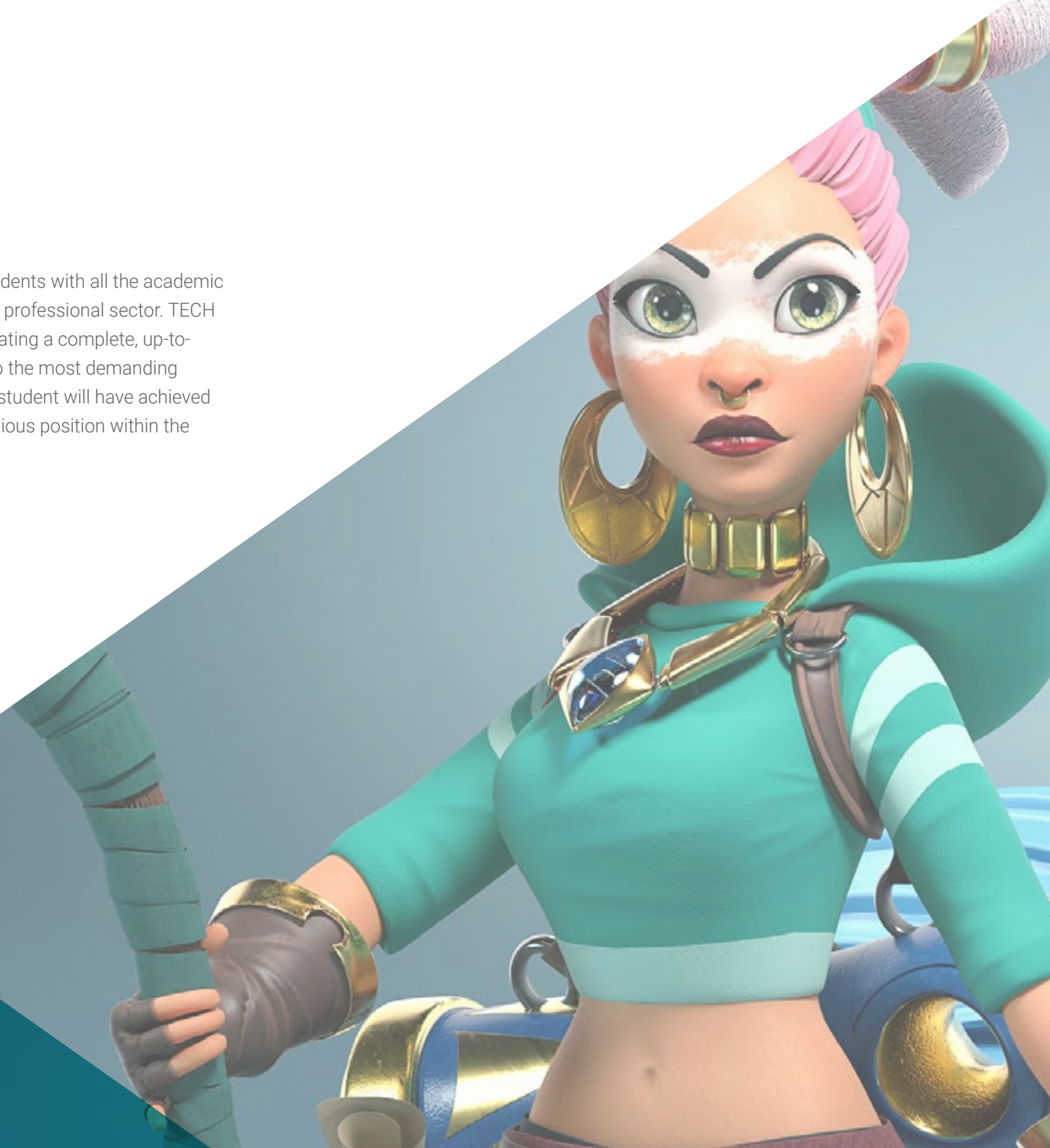
The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed to learn in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the academic year. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

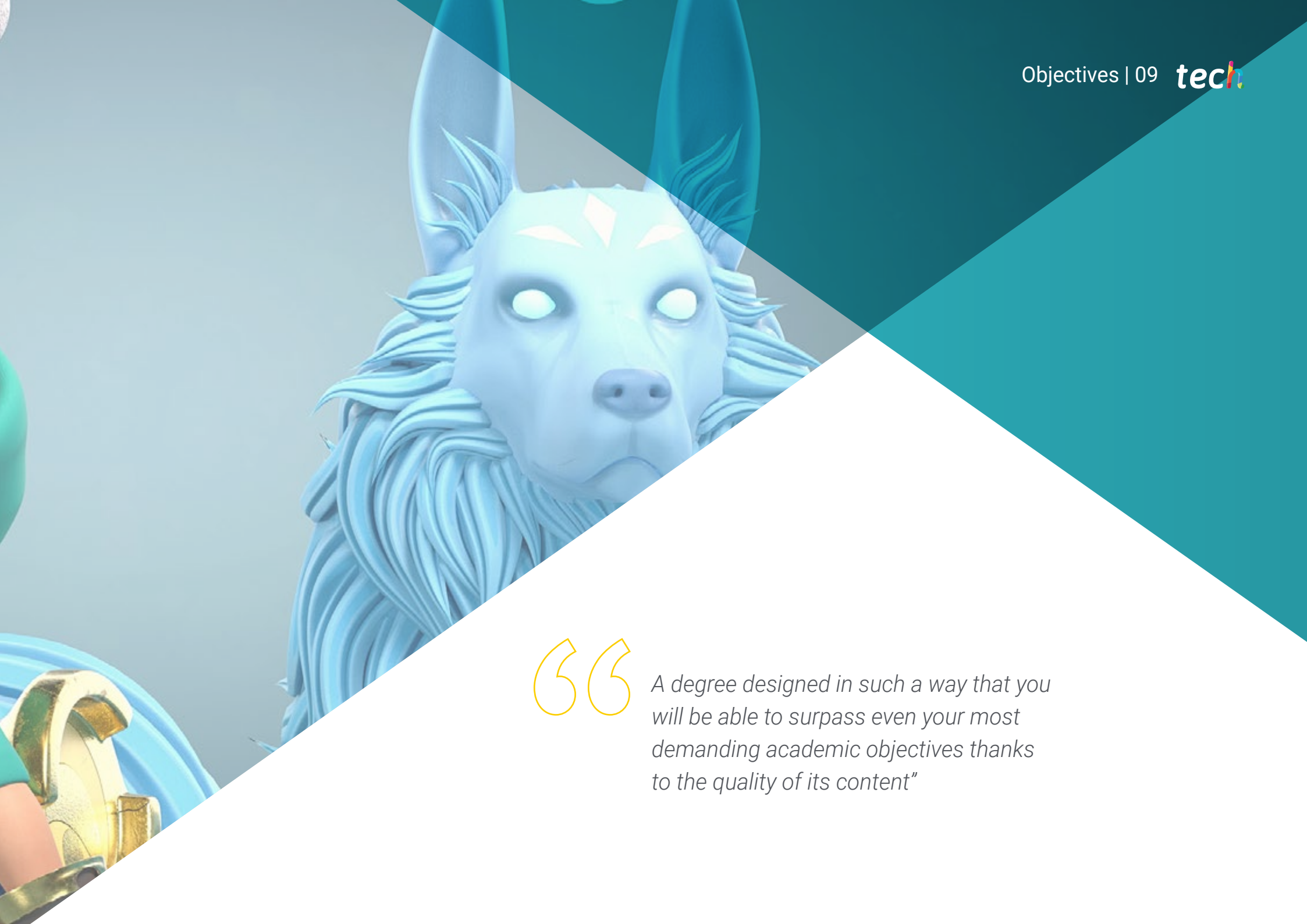


# 02 Objectives

The objective of this course is none other than to provide students with all the academic tools that will enable them to achieve their own goals in their professional sector. TECH and its team of experts have invested dozens of hours in creating a complete, up-to-date, comprehensive and top-quality qualification, adapted to the most demanding market specifications. Therefore, by passing the course, the student will have achieved all the necessary skills to successfully perform in any prestigious position within the area of 3D video game design.







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*A degree designed in such a way that you will be able to surpass even your most demanding academic objectives thanks to the quality of its content”*



## General Objectives

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- ◆ Use the ZBrush program for 3D sculpting
- ◆ Develop organic modeling and retopology techniques
- ◆ Finalize 3D characters for Portfolio



*Knowing how to develop organized and planned pipelines will help you undertake video game projects more effectively and ensure a more optimized set of results"*





## Specific Objectives

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- ◆ Master the most advanced 3D modeling techniques
- ◆ Develop the necessary knowledge for 3D texturing
- ◆ Export objects for 3D and Unreal Engine software
- ◆ Specialize students in digital sculpture
- ◆ Analyze the different digital sculpting techniques
- ◆ Research character retopology
- ◆ Examine how to pose a character to loosen the 3D model
- ◆ Refine our work with advanced high-polygon modeling techniques

# 03

# Course Management

TECH has selected for this Postgraduate Certificate will be in a group of professionals in the of video game design with a wide and extensive work experience in the management and direction of Gaming projects. It is a teaching team formed by active specialists, so they know in detail the current strategies and techniques that are having the best results. It is, therefore, a unique academic opportunity to grow in this field with the best experts.



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*The teaching staff will be to your Layout to answer any questions you may have during La academic experience via the Virtual Campus”*

## Management



### Mr. Ortega Ordóñez, Juan Pablo

- Director of Engineering and Gamification Design for the Intervenía Group
- Professor at ESNE of Video Game Design, Level Design, Video Game Production, Middleware, Creative Media Industries, etc
- Advisor in the foundation of companies such as Avatar Games or Interactive Selection
- Author of the book Video Game Design
- Member of the Advisory Board of Nima World

## Professors

### Dr. Pradana Sánchez, Noel

- ♦ Specialist in Rigging and 3D Animation for videogames
- ♦ 3D Graphic Artist at Dog Lab Studios
- ♦ Producer at Imagine Games leading the video game development team
- ♦ Graphic artist at Wildbit Studios with 2D and 3D works
- ♦ Teaching experience in ESNE and in the CFGS in 3D Animation: games and educational environments
- ♦ Master's Degree in Video Game Design and Development from ESNE University
- ♦ Master's Degree for Teachers by URJC
- ♦ Specialist in Rigging and 3D Animation Voxel School



# 04

## Structure and Content

TECH invests hundreds of hours in the development of each of its programs. For this reason, its qualifications are the result of the effort and perseverance of a team of experts who always strive to create the best content, adapted to the specifications of the sector, market demand and the immediate relevance of the subject matter. All of this is compiled in a convenient and accessible 100% online program that gives students the opportunity to organize their academic experience in a personalized way that is perfectly compatible with their work and personal life.







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*Thanks to the use of the Relearning methodology, you will be able to save hours of boring and tedious memorization without giving up the acquisition of exhaustive and specialized knowledge"*

## Module 1. Advanced 3D

- 1.1. Advanced 3D Modeling Techniques
  - 1.1.1. Interface Configuration
  - 1.1.2. Modeling Observation
  - 1.1.3. Modeling in High
  - 1.1.4. Organic Modeling for Videogames
  - 1.1.5. Advanced 3D Object Mapping
- 1.2. Advanced 3D Texturing
  - 1.2.1. Substance Painter Interfaces
  - 1.2.2. Materials, Alphas and Brush Use
  - 1.2.3. Particle Use
- 1.3. 3D Software and Unreal Engine Export
  - 1.3.1. Unreal Engine Integration in Designs
  - 1.3.2. 3D Model Integration
  - 1.3.3. Unreal Engine Texture Application
- 1.4. Digital Sculpting
  - 1.4.1. DigitalSculpting with ZBrush
  - 1.4.2. First Steps in ZBrush
  - 1.4.3. Interface, Menus and Navigation
  - 1.4.4. Reference Images
  - 1.4.5. Full 3D Modeling of Objects in ZBrush
  - 1.4.6. Base Mesh Use
  - 1.4.7. Part Modeling
  - 1.4.8. 3D Model Export in ZBrush
- 1.5. Polypaint Use
  - 1.5.1. Advanced Brushes
  - 1.5.2. Texture
  - 1.5.3. Default Materials
- 1.6. Rheopology
  - 1.6.1. Rheopology Use in the Video Game Industry
  - 1.6.2. Low-- Poly Mesh Creation
  - 1.6.3. Software Use for Rhetopology



- 1.7. 3D Model Positions
  - 1.7.1. Reference Image Viewers
  - 1.7.2. Transpose Use
  - 1.7.3. Transpose Use for Models Composed of Different Pieces
- 1.8. 3D Model Export
  - 1.8.1. 3D Model Export
  - 1.8.2. Texture Generation for Exportation
  - 1.8.3. 3D Model Configuration with the Different Materials and Textures
  - 1.8.4. Preview of the 3D Model
- 1.9. Advanced Working Techniques
  - 1.9.1. 3D Modeling Workflow
  - 1.9.2. 3D Modeling Work Process Organization
  - 1.9.3. Production Effort Estimates
- 1.10. Model Finalization and Export for Other Programs
  - 1.10.1. Workflow for Model Finalization
  - 1.10.2. Zplugging Exportation
  - 1.10.3. Possible Files. Advantages and Disadvantages

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*Don't think twice and opt for a degree that will elevate your talent to the top of the 3D video game design sector”*

# 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.

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*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.

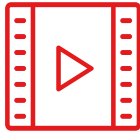
*Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.*

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.



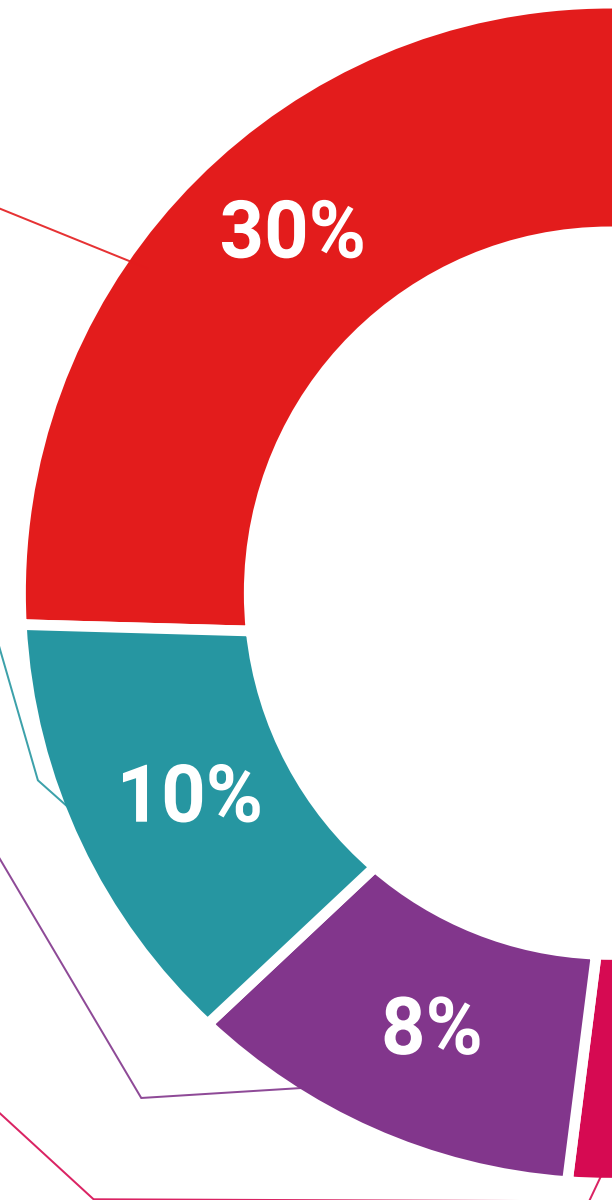
### Practising Skills and Abilities

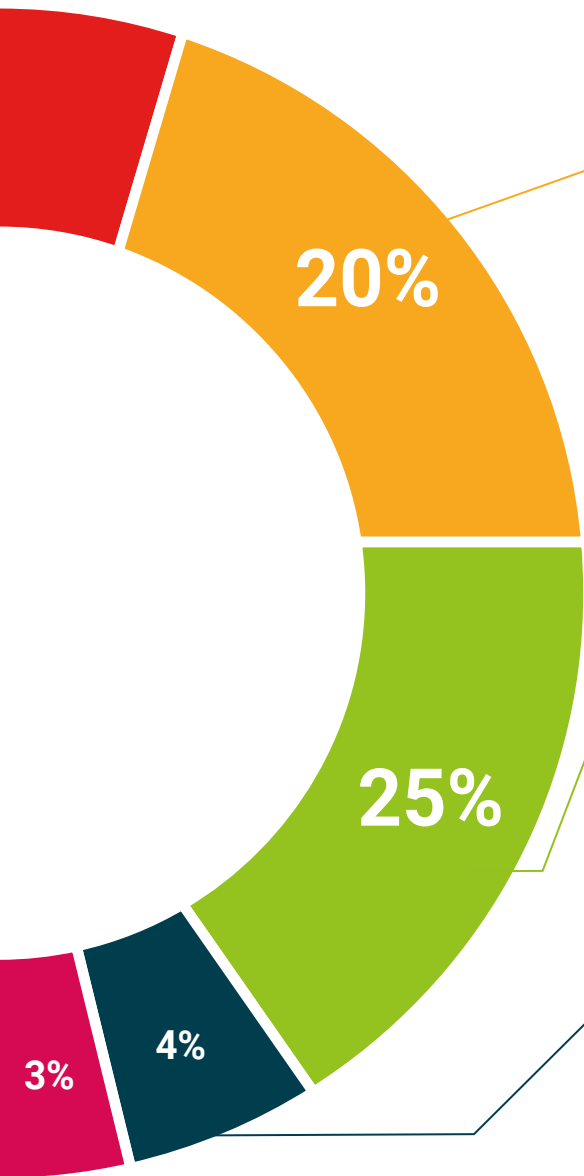
They will carry out activities to develop specific competencies and skills in each thematic area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



### 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

The Postgraduate Certificate in Advanced 3D Techniques for Professional 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 Advanced 3D Techniques for Professional 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.

Title: **Postgraduate Certificate in Advanced 3D Techniques for Professional Video Games**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**





**Postgraduate Certificate**  
Advanced 3D Techniques for  
Professional Video Games

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