Postgraduate Certificate
Video Game Programming

tech *technological university*

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Postgraduate Certificate
Video Game Programming

- » Modality: **online**
- » Duration: **6 weeks**
- » Certificate: **TECH Technological University**
- » Dedication: **16h/week**
- » Schedule: **at your own pace**
- » Exams: **online**

Website: **www.techtitute.com/pk/videogames/postgraduate-certificate/video-game-programming**

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01
Introduction

The video games industry is one of the most powerful today. Numerous companies develop thousands of games a year in an attempt to achieve sales success. Each one of them has several specialized departments in which art and technique are combined, making professionals from different branches necessary, from designers who are in charge of the visual aspect of the video games to the code with which they are programmed. This qualification offers the opportunity to learn how to program video games specifically, opening the doors to employment in the sector to its graduates.

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The most exciting industry needs new programmers, you could be the next successful developer"

The video game industry is one of the fastest growing industries in recent years. It encompasses a variety of activities, beyond the sale of games, as it also includes online events, competitions and broadcasts on different platforms. Therefore, it is an economic sector that needs many professionals from different fields, from the planning of a video game to its sale and promotion.

One of the key tasks in this process is the programming of the video game itself, a delicate task that requires highly specialized professionals to meet the demands of companies, which require experts with specific knowledge in video game development.

For this reason, this Postgraduate Certificate in Video Game Programming is a necessary qualification for all those who wish to start their way in the development of video games, as it offers all the necessary knowledge to open new doors in the workplace.

This program offers in-depth and innovative teaching, which comes directly from the professional world, to provide students with the best tools for working in this field. As such, this Postgraduate Certificate develops all the keys in terms of work environments and programming languages so that those who complete it can work directly in the sector.

This **Postgraduate Certificate in Video Game Programming** has a curriculum adapted to the current market demands. Its most notable features are:

- ◆ The teaching of all the relevant elements when programming a video game
- ◆ The contribution of a context about the video game industry to the student
- ◆ Practical exercises where the self-assessment process can be carried out to improve learning
- ◆ Content that is accessible from any fixed or portable device with an Internet connection

Video game programming is the present and the future, learn with TECH and improve your job opportunities"

Do you know how your favorite video games are programmed? With this Postgraduate Certificate, you will learn how.

" *Enter the profession of the present and the future, learn how to program video games"*

Specialize in video game programming and make a career in today's most interesting sector.

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

02
Objectives

The main objective of this Postgraduate Certificate in Video Game Programming is to provide students with the best programming tools focused on the field of video games, so that they know the most common work environments and the most common tasks in the coding of a game. In this way, the students will have access to the best jobs thanks to their specific education in the field. The general and specific objectives of this qualification are presented below.

" *TECH's goal is to teach the best video game programmers of the future"*

General Objectives

- Gain knowledge about the different video game genres, the concept of gameplay and its characteristics to apply them in the analysis of video games or in the creation of video game design

- Deepen understanding of the production of video games and in the SCRUM methodology for project production

- Learn the fundamentals of video game design and the theoretical knowledge that a video game designer should know

- Generate ideas and create entertaining stories, plots and scripts for video games

- Get to know the theoretical and practical bases of the artistic design of a video game

- Be able to create an independent digital entertainment startup

Specific Objectives

- Handle the most used engine in videogame development: Unity 3D Engine
- Study Unity programming and learn the program's interface
- Learn about the creation of a 2D video game: programming character movements, enemies and animations
- Develop different elements of the game such as platforms or keys
- Create the game interface or HUD
- Expand knowledge in AI, both for the creation of enemies and 2D non-playable characters (NPCs)

Achieve your goals by specializing, programming is essential to develop a video game"

03
Course Management

This Postgraduate Certificate in Video Game Programming is taught by the best specialists in video game development. Thanks to their experience, students will be able to obtain a series of competencies that will make their path to the industry easier, becoming professionals valued by companies in the sector.

tech

"The best experts teach this Postgraduate Certificate, offering the knowledge they have acquired in their professional careers"

Management

### Mr. Blasco Vilches, Luis Felipe

- Narrative designer at Stage Clear Studios, developing a confidential product
- Narrative designer at HeYou Games in the "Youturbo" project
- E-learning and serious games product designer and scriptwriter for Telefónica Learning Services, TAK and Bizpills
- Level designer at Indigo for the "Meatball Marathon" project
- Screenwriting teacher in the Master's Degree in Video Game Creation at the University of Malaga
- Lecturer in Video Game Narrative Design and Production at the TAI Film Department, Madrid
- Narrative Design and Script Workshops teacher, and in the Video Game Design Degree at ESCAV, Granada
- Degree in Hispanic Studies from the University of Granada, Spain
- Master's Degree in Creativity and Television Screenwriting, Rey Juan Carlos University

04
Structure and Content

The contents of this Postgraduate Certificate have been created by qualified professionals who know perfectly the video game industry and what it currently demands from programmers, so it is the best way to become an expert video game developer and make your way in one of the most important economic and entertainment sectors worldwide.
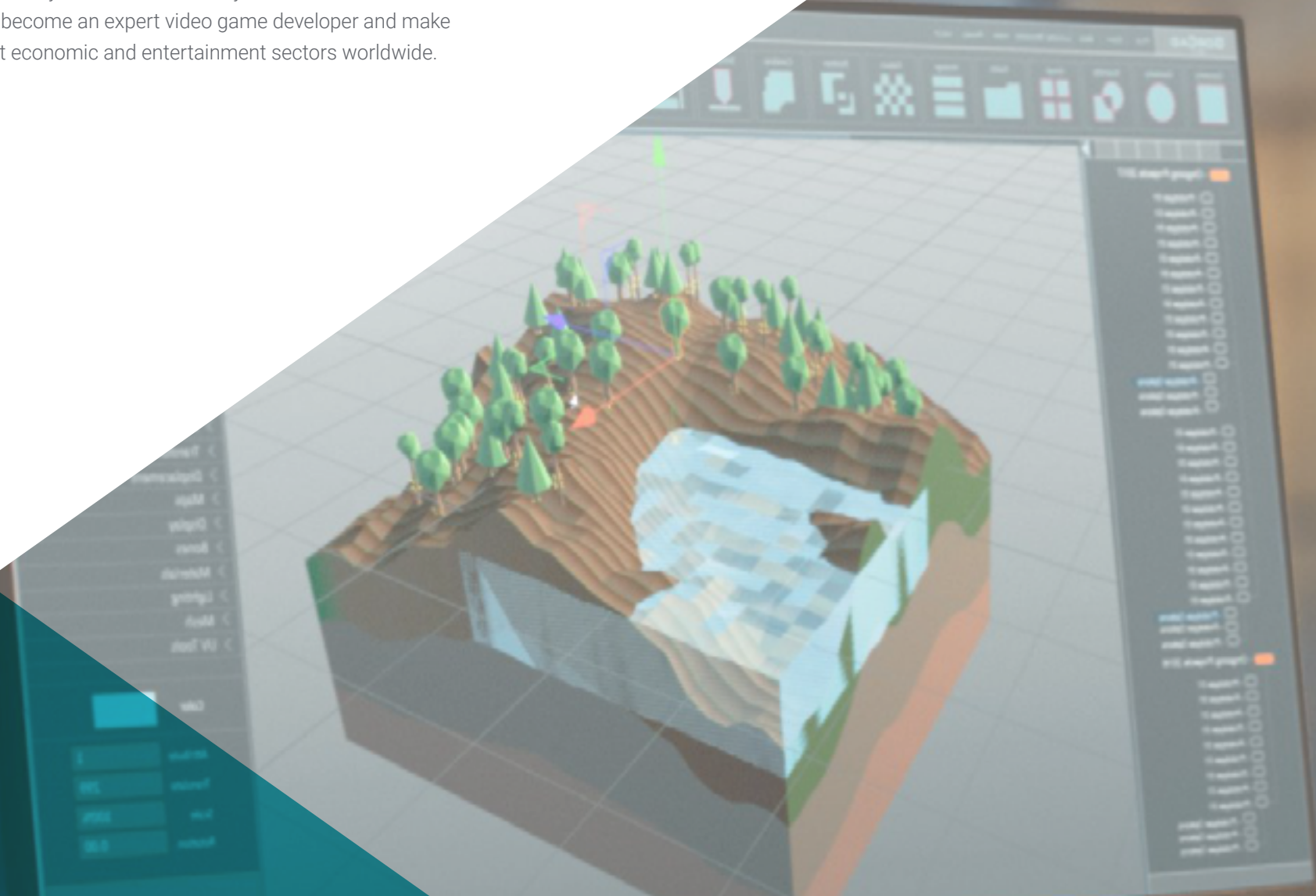
Content that meets your expectations and needs"

Module 1. Programming

1.1.   Unity 3D Programming
    1.1.1.   Installation
    1.1.2.   Elements of Interface
    1.1.3.   Create Scene and Import Object
1.2.   Terrain
    1.2.1.   Terrain I: Creating Ground and Mountains
    1.2.2.   Terrain II: Trees and Flowers
    1.2.3.   Terrain III: Water and Skybox
1.3.   2D Character Creation
    1.3.1.   Collisions
    1.3.2.   Collisions
    1.3.3.   Trigger
1.4.   Gameplay I
    1.4.1.   Programming: Attacking Skills
    1.4.2.   Programming: Jumping Skills
    1.4.3.   Programming: Shooting Skills
1.5.   Gameplay II
    1.5.1.   Programming: Weapons
    1.5.2.   Programming: Items
    1.5.3.   Programming: Checkpoint
1.6.   AI: Enemies
    1.6.1. Basic Enemy
    1.6.2.   Airborne Enemy
    1.6.3.   Complex Enemy

The most specialized program for the most demanding students"

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.

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.

The student will learn to solve complex situations in real business environments through collaborative activities and real cases.

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.

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 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.

30%

10%

8%

20%

25%

4%

3%
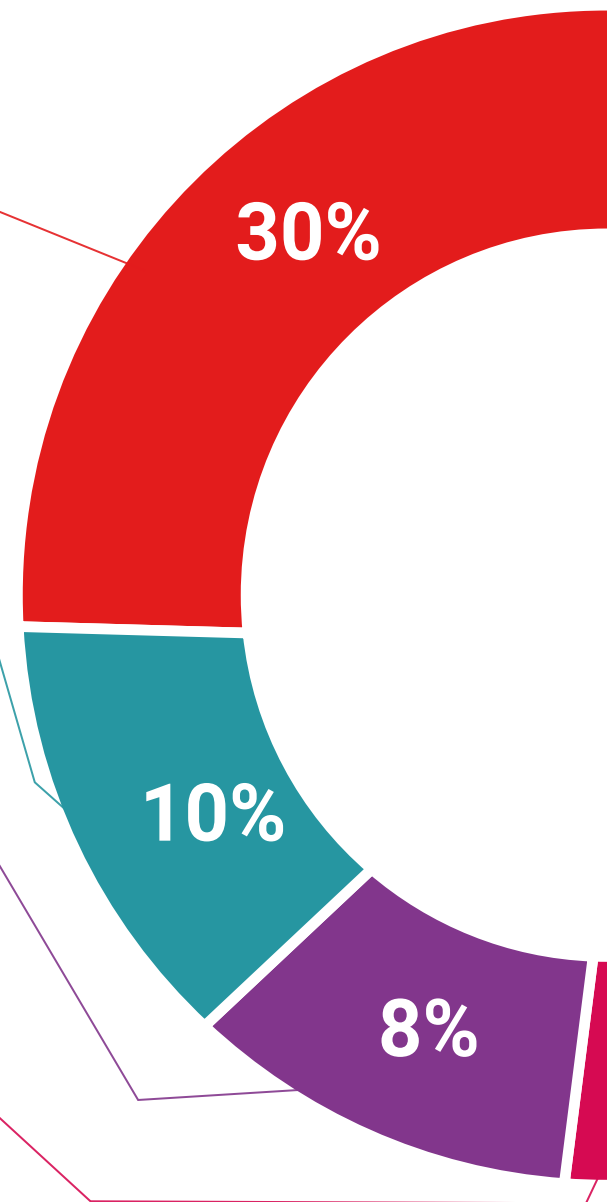
Case Studies

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.

Certificate

The Postgraduate Certificate in Video Game Programming guarantees students, in addition to the most rigorous and up-to-dated education, access to a Postgraduate Certificate issued by TECH Technological University.

Successfully complete this program and receive your university degree without travel or laborious paperwork"

This **Postgraduate Certificate in Video Game Programming** contains the most complete and up-to-date educational program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Certificate** issued by **TECH Technological University** via tracked delivery*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Certificate, and meets the requirements commonly demanded by labor exchanges, competitive examinations and professional career evaluation committees.

Title: **Postgraduate Certificate in Video Game Programming**

Official Nº of hours: **150 h.**

tech technological university

Awards the following
CERTIFICATE
to

Mr./Ms. _____, with identification number _____.
For having passed and accredited the following program

POSTGRADUATE CERTIFICATE
in

Video Game Programming

This is a qualification awarded by this University, equivalent to 150 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

Unique TECH Code: AFWORD23S   techtitute.com/certificates

*Apostille Convention. In the event that the student wishes to have their paper certificate issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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