Postgraduate Diploma
Video Game Programming Management

tech technological university

Postgraduate Diploma
Video Game Programming Management

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

Website: **www.techtitute.com/in/videogames/postgraduate-diploma/postgraduate-diploma-video-game-programming-management**

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Introduction

Video game programming is a highly specific field that requires considerably extensive and specialized knowledge. It is insufficient to know the essential fundamentals of the discipline, since the field of video games is significantly different from that of other sectors. That is why managing video game programming teams is an endeavor that requires adequate preparation. This course offers students the best tools in programming management so they can respond to the different challenges that may arise in the development of a successful video game.

Manage high-level programming teams thanks to this Postgraduate Diploma"

Although it is an industry that shares many similarities with others in the audiovisual and digital field, video games have a lot of specificities that have established a niche at the professional level. This has resulted in the various professionals across the industry needing further training focused on this particular area to be able to succeed, since there are numerous details that are not immediately extrapolated from other nearby disciplines.

That is why it is essential to receive training and gain knowledge on video games in every position in the company, which is especially relevant when it comes to programming.

Programming is at the core of any video game, and its success depends on it, for it is the backbone of the most basic and more complex elements involved, such as gameplay, general operation and graphics integration, among other things

The Postgraduate Diploma in Video Game Programming Management is the key for all professionals who wish to work in the industry and become valued programmers by the best video game companies in the world.

This **Postgraduate Diploma in Video Game Programming Management** contains the most complete and up-to-date program on the market. The most important features include:

- Practical cases presented by experts in video game programming management
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- Practical exercises where self-assessment can be used 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

Program high-quality video games with this course"

Learn to manage video game programming for a successful title with this educational program.

The video game industry needs great programming specialists. You could be one of them.

" *Major video game companies need programming management experts to manage their projects"*
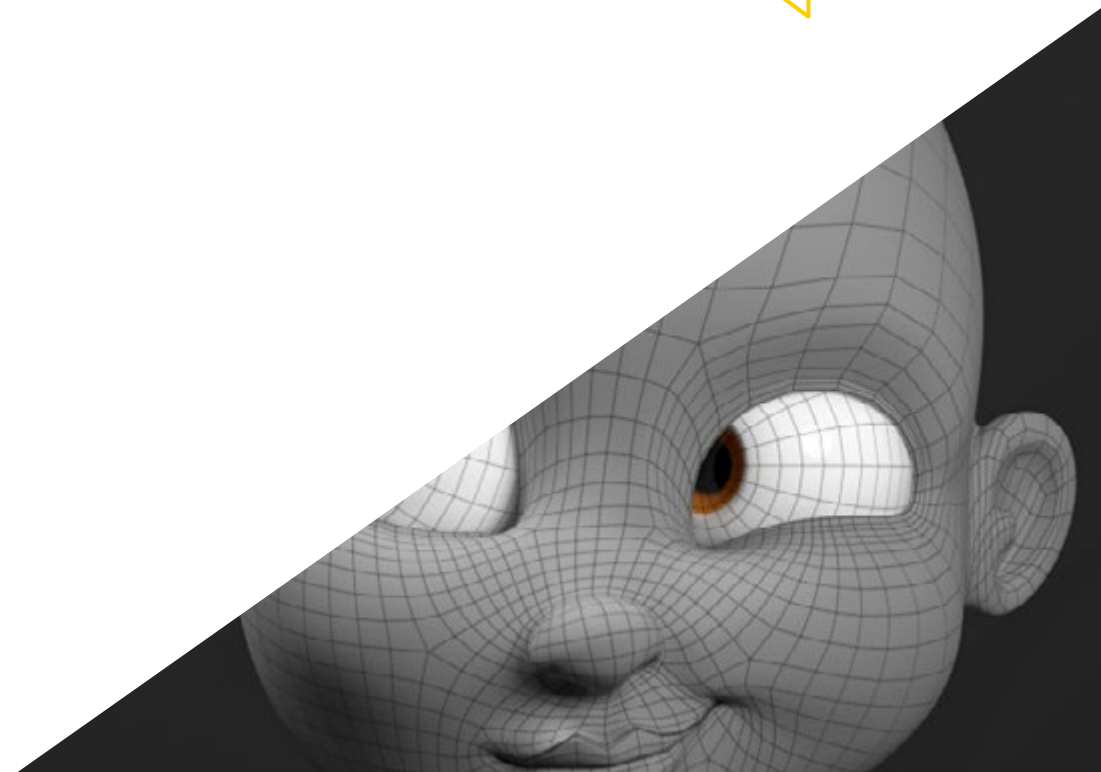
The program's teaching staff includes professionals from sector who contribute their work experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

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 specialization 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

TECH wants its students to achieve their dreams, so it has taken it upon itself to offer the best education, so they learn everything they need to fulfill them. For that reason, the primary objective of this Postgraduate Diploma in Video Game Programming Management is to offer students the most innovative and advanced knowledge of video game development, so they can access the most renown companies in the industry and participate in the creation of the most successful titles of the future.

Achieve all your goals in the field of video games thanks to TECH Technological University"

General Objectives

- Become familiar the different programming languages and methods used in video games
- Delve into video game production processes and integrating programming into these stages
- Acquire management skills applied to the field of video game programming
- Master basic programming languages used in video games
- Apply knowledge of software engineering and specialized programming to video game development
- Understand the role of programming in video game development

You will achieve your goals thanks to our tools and you will be accompanied along the way by leading professionals"

Specific Objectives

Module 1. Programming Fundamentals

- Understand the basic structure of computers, software and general-purpose programming languages
- Analyze the essential elements of a computer program, such as the different data types, operators, expressions, statements, I/O and control statements
- Interpret algorithms as the necessary basis to develop computer programs

Module 2. Software Engineering

- Become familiar with the bases of software engineering, software processes and different development models, including agile technologies
- Recognize requirements engineering, its development, elaboration, negotiation and validation in order to understand the main standards in terms of software quality and project management

Module 3. Video Game Engines

- Discover how a video game engine works and its architecture
- Understand the basic features of existing game engines
- Correctly and efficiently program applications used in video game engines
- Choose the most appropriate paradigm and programming languages to program applications used in video game engines

Structure and Content

This program has been created by leading experts in video game development, so students can enjoy the best content available in the area. Students are guaranteed to learn knowledge that can be directly applied to their professional careers, enabling them to achieve professional success thanks to the skills acquired on the course. Among other things, they will learn the basics of programming and software engineering, and will expand their knowledge in the use of video game engines.

Program like the best developers in the world thanks to these excellent contents"

Module 1. Programming Fundamentals

1.1. Introduction to Programming
    1.1.1. Basic Computer Structure
    1.1.2. Software
    1.1.3. Programming Languages
    1.1.4. Computer Application Life Cycle

1.2. Algorithm Design
    1.2.1. Problem Solving
    1.2.2. Descriptive Techniques
    1.2.3. Algorithm Elements and Structure

1.3. Program Elements
    1.3.1. C++ Origin and Features
    1.3.2. Development Environment
    1.3.3. The Concept of a Program
    1.3.4. Types of Fundamental Data
    1.3.5. Operators
    1.3.6. Expressions
    1.3.7. Statements
    1.3.8. Data Input and Output

1.4. Control Statements
    1.4.1. Statements
    1.4.2. Branches
    1.4.3. Loops

1.5. Abstraction and Modularity: Functions
    1.5.1. Modular Design
    1.5.2. Concept of Function and Utility
    1.5.3. Definition of Function
    1.5.4. Execution Flow when Function Is Called
    1.5.5. Function Prototypes
    1.5.6. Results Return
    1.5.7. Calling Functions: Parameters
    1.5.8. Parameter Passing According to Reference and Value
    1.5.9. Scope Identifier

1.6. Statistical Data Structures
    1.6.1. Arrays
    1.6.2. Matrices Polyhedra
    1.6.3. Searching and Sorting
    1.6.4. Chaining: I/O Functions for Chains
    1.6.5. Structures: Unions
    1.6.6. New Types of Data

1.7. Dynamic Data Structures: Pointers
    1.7.1. Concept: Definition of Pointer
    1.7.2. Pointer Operators and Operations
    1.7.3. Pointer Arrays
    1.7.4. Pointers and Arrays
    1.7.5. Chain Pointers
    1.7.6. Structure Pointers
    1.7.7. Multiple Indirection
    1.7.8. Function Pointers
    1.7.9. Function, Structure and Array as Function Parameters

1.8. Files
    1.8.1. Basic Concepts
    1.8.2. File Operations
    1.8.3. Types of Files
    1.8.4. File Organization
    1.8.5. Introduction to C++ Files
    1.8.6. Managing Files

1.9. Recursion
    1.9.1. Definition of Recursion
    1.9.2. Types of Recursion
    1.9.3. Advantages and Disadvantages
    1.9.4. Considerations
    1.9.5. Recursive-Iterative Conversion
    1.9.6. Recursion Stack

Module 2. Software Engineering

Module 3. Video Game Engines

You will develop the best video games in the world thanks to your newly acquired knowledge"

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.

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.

05
Certificate

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

Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork"

This **Postgraduate Diploma in Video Game Programming Management** contains the most complete and up to date program on the market.

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

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

Title: **Postgraduate Diploma in Video Game Programming Management**

Official N° of Hours: **450 h.**

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Awards the following
CERTIFICATE
to

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

POSTGRADUATE DIPLOMA
in

Video Game Programming Management

This is a qualification awarded by this University, equivalent to 450 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

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country.   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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