Postgraduate Certificate
Intelligent Systems in Video Game Programming

tech *technological university*

Postgraduate Certificate
Intelligent Systems in
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/us/videogames/postgraduate-certificate/intelligent-systems-video-game-programming**

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01
Introduction

The implementation of intelligent systems allows video games to give very precise and realistic responses in each passage or level in which the player finds themselves. Therefore, it depends on them that a user's experience with a specific game is satisfactory, since they are the tool that will guide the title in one direction or another according to the *gamer*'s choices. For this reason, this is a fundamental area in the development of a video game, and companies in the sector are looking for the best specialists who can contribute their knowledge to make their works a great commercial success. And this program, which is developed in a 100% online format, is the answer for professionals who want to progress in this area, as it will provide them with the latest innovations in intelligent systems, based on the best multimedia materials.

> *Specialize in intelligent systems and bring the best solutions to your video game development projects"*

When programming a video game there are numerous issues to consider. Its aesthetics, its story, which characters will guide the main plot, its mechanics, its structure, whether by levels, regions or open world, among many others. One of the most important elements is the integration of artificial intelligence and intelligent systems.

These systems will define how a video game responds to certain situations. Today, realism is essential, so the way in which a game deals with certain player choices at the narrative and mechanics level is very important in order to be realistic.

Thus, this Postgraduate Certificate in Intelligent Systems in Video Game Programming will provide the professional with all the knowledge required to enter this field and stand out. Throughout the program, therefore, the student will be able to delve into issues such as agents in artificial intelligence and software engineering or languages for ontologies and software for the creation of ontologies, among many others.

All of this is based on a 100% online learning method that will allow the student to continue working without interruptions, since this program is not subject to fixed schedules and does not force the student to physically move to another location to attend classes. In addition, the professional will have access to the best multimedia resources, with which it will be easy and quick to specialize in this field of video game development.

This **Postgraduate Certificate in Intelligent Systems in Video Game Programming** contains the most complete and up-to-date academic program on the market. Its most notable features are:

- Practical cases presented by experts in video game programming and development
- 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
- 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

Thanks to this program, you will be able to delve deeper into issues such as languages and software for the creation of ontologies"

This program will provide you with immediate professional progress thanks to its contents focused on current trends in video game development"

This Postgraduate Certificate is developed through a 100% online methodology that will allow you to combine your studies with your professional career.

The best multimedia materials will be at your fingertips: exercises, videos, master classes, lectures, etc.
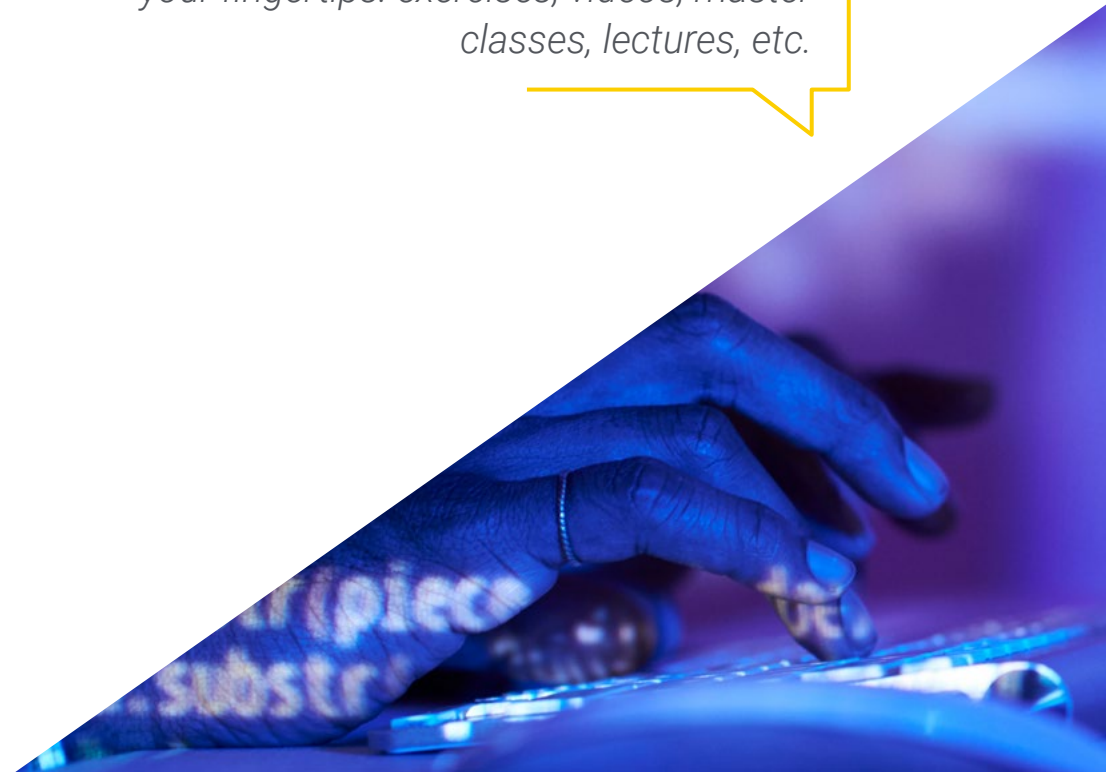
The teaching staff of this program includes professionals from the industry, who contribute the experience of their work to this program, in addition to recognized specialists from reference societies and prestigious universities.

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.

02
Objectives

This Postgraduate Certificate in Intelligent Systems in Video Game Programming follows the objective of converting the student into a great video game development professional. And to achieve this, they will gain expertise in one of the fastest growing areas in the field today: intelligent systems and programming. Therefore, upon completing this program, the student will have acquired all the necessary skills to improve any video game project.

Reach all your professional goals thanks to this program, specially designed to make you a great specialist in intelligent systems"

General Objectives

- Learn the fundamentals of video game design and the theoretical knowledge that a video game designer should know
- Understand the importance of Intelligent Systems in Video Game Programming

Intelligent Systems are one of the keys in video game development, and this program will bring you closer to this field in a fast and simple way"

Specific Objectives

- Establish the concepts related to agent theory and agent architecture and their reasoning process
- Assimilate the theory and practice behind the concepts of information and knowledge, as well as the different ways of representing knowledge
- Understand the operation of semantic reasoners, knowledge-based systems and expert systems

03
Structure and Content

This Postgraduate Certificate in Intelligent Systems in Video Game Programming is composed of a specialized module through which the student will be able to gain in-depth knowledge of the theory of agents, agents in artificial intelligence and software engineering or the different tools for the creation of ontologies. With this knowledge, you will be able to give a great boost to your career by taking advantage of the growing importance that this area has been acquiring in the development of video games.

You won't find more advanced and complete content than this to specialize in intelligent systems in video game programming"

Module 1. Intelligent Systems

1.1.   Agents Theory
    1.1.1.   Concept History
    1.1.2.   Agent Definition
    1.1.3.   Agents in Artificial Intelligence
    1.1.4.   Agents in Software Engineering

1.2.   Agent Architectures
    1.2.1.   The Reasoning Process of an Agent
    1.2.2.   Reactive Agents
    1.2.3.   Deductive Agents
    1.2.4.   Hybrid Agents
    1.2.5.   Comparison

1.3.   Information and Knowledge
    1.3.1.   Difference between Data, Information and Knowledge
    1.3.2.   Data Quality Assessment
    1.3.3.   Data Collection Methods
    1.3.4.   Information Acquisition Methods
    1.3.5.   Knowledge Acquisition Methods

1.4.   Knowledge Representation
    1.4.1.   The Importance of Knowledge Representation
    1.4.2.   Definition of Knowledge Representation According to Role
    1.4.3.   Knowledge Representation Features

1.5.   Ontologies
    1.5.1.   Introduction to Metadata
    1.5.2.   Philosophical Concept of Ontology
    1.5.3.   Computing Concept of Ontology
    1.5.4.   Domain Ontologies and Higher-Level Ontologies
    1.5.5.   Building an Ontology

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.

30%

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.

10%

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.

8%

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.

20%

25%

4%

3%
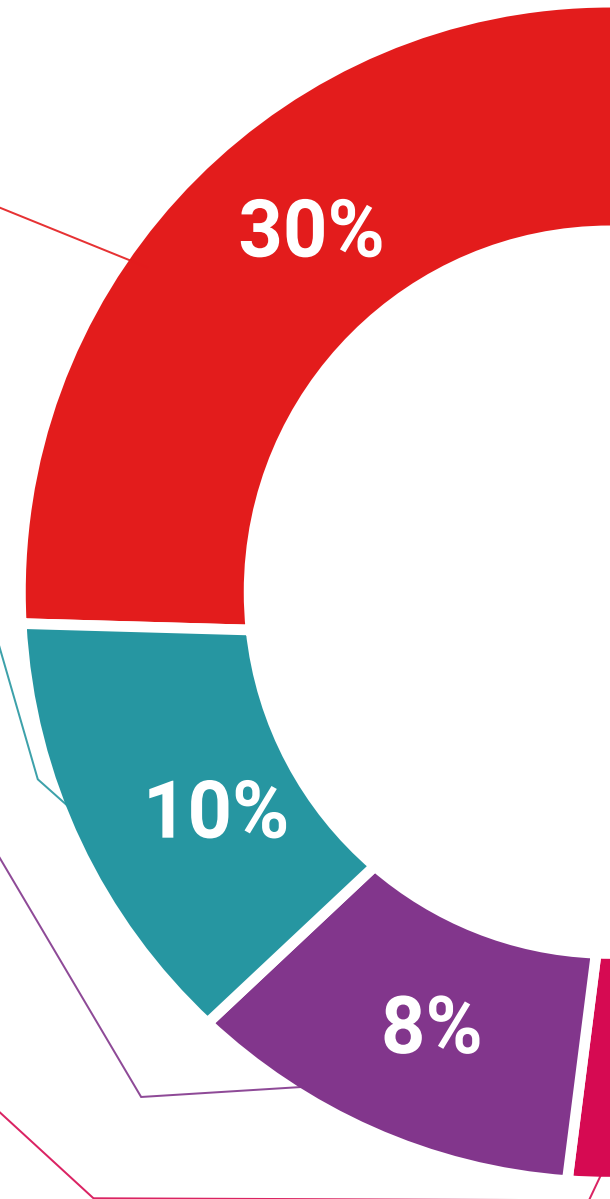
Case Studies

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 Certificate in Intelligent Systems in Video Game Programming guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate 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 Certificate in Intelligent Systems in Video Game Programming** 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 Certificate** issued by **TECH Technological University** via tracked delivery*.

The diploma 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 Intelligent Systems in Video Game Programming**
Official Nº of hours: **150 h.**

tech technological university

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

POSTGRADUATE CERTIFICATE
in
Intelligent Systems 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

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 diploma issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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