Postgraduate Certificate
Algorithmics for 3D Video Game Development

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Algorithmics for 3D Video Game Development

- » 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/algorithmics-3d-video-game-development**

Index

01
Presentation

Algorithm management is a fundamental requirement for any professional who is dedicated to the development of video games on the various platforms that exist today Thanks to the development of optimal and logical flow diagrams, it is possible to perform multiple tasks or solve problems through computation, optimizing processes and simplifying steps For this reason, and so that the graduate interested in this field can specialize in said topic, TECH has developed this highly complete program This is a 100% online academic experience with which you can work on perfecting your professional skills in the use of Unity 3D for prototyping and specific programming of video games.

Becoming a specialist in gaming algorithms is now a feasible and easy possibility to achieve with TECH and this very complete and intensive 100% online Postgraduate Certificate"

Since the origin of computer processes in the mid-twentieth century, algorithms have played a fundamental role in their development, being indispensable for the creation of systems that, over time, have become more complex and specialized Among its many applications, it is worth mentioning the use of flow charts to facilitate the development of video games thanks to which, instead of recording an action, it is possible to simplify the steps to make them simpler and more dynamic.

The demand that currently exists by large companies in this sector such as Nintendo, Ubisoft or Tencent for professionals who master these strategies, as well as the main computer tools, is what has made TECH take the decision to launch this program
This is a 6-week postgraduate course in which the graduate will be able to work in the management of Unity 3D and the development of video games through specific programming techniques and prototyping, optimizing their results for the multiple platforms that currently exist. He will also delve into the latest concepts of augmented reality and artificial intelligence programming through neural networks and algorithms.

The course will include 150 hours of theoretical, practical and additional content presented in different formats: detailed videos, self-knowledge exercises, complementary readings, dynamic summaries and research articles In addition, all the material will be available from the beginning of the course and can be downloaded to any device with an internet connection, whether tablet, PC or cell phone In this way, the graduate will attend a highly capacitating educational experience specifically adapted to his or her needs, without restricted schedules or face-to-face classes.

This **Postgraduate Certificate in Algorithmics for the Development of 3D 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

Would you like to delve into the applications of video games in other areas and industries beyond entertainment? With this TECH program you will be able to do so through 150 hours of the best content"

"You will have access to the Virtual Campus without timetables and from any device with internet connection Meaning you can connect whenever you need it"

TECH gives you the opportunity to work on improving the management of Unity and video game prototyping with this very complete Postgraduate Certificate.

A cutting-edge and novel educational opportunity to delve into specific programming techniques through the Singleton model and resource loading in Windows game execution.
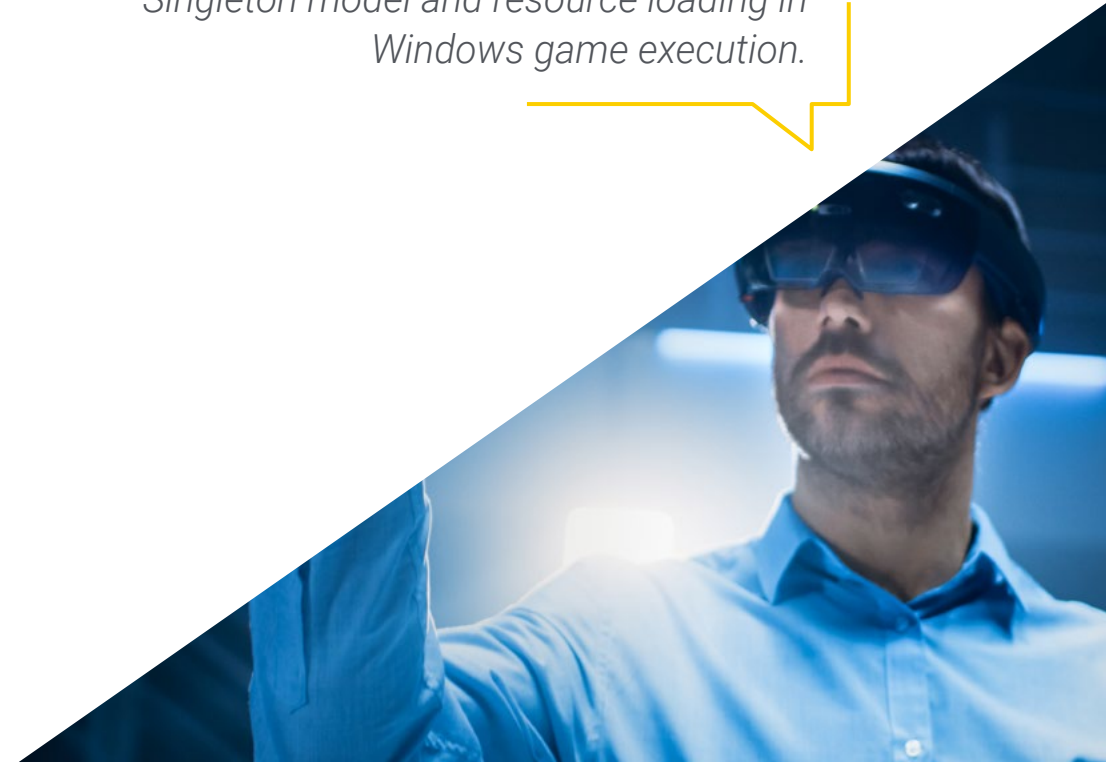
The program includes in its teaching staff professionals from the sector who bring to this program the experience of their work, as well as recognized specialists from leading societies and prestigious universities.

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 student will be assisted by an innovative interactive video system created by renowned and experienced experts.

02
Objectives

The importance of algorithms in the development of video games, as well as the mastery, by professionals in this area, of their techniques for programming and interface design, is the main argument that TECH experts have used for the development of this Postgraduate Certificate. In their commitment to ensure the professional growth of more and more graduates, they have launched a dynamic and comprehensive qualification program, which aims to provide them with all the information they need to acquire specialized knowledge about flowcharts in computing and exhaustive degree, whose objective is to provide them with all the information they need to acquire specialized knowledge about flowcharts in computing.
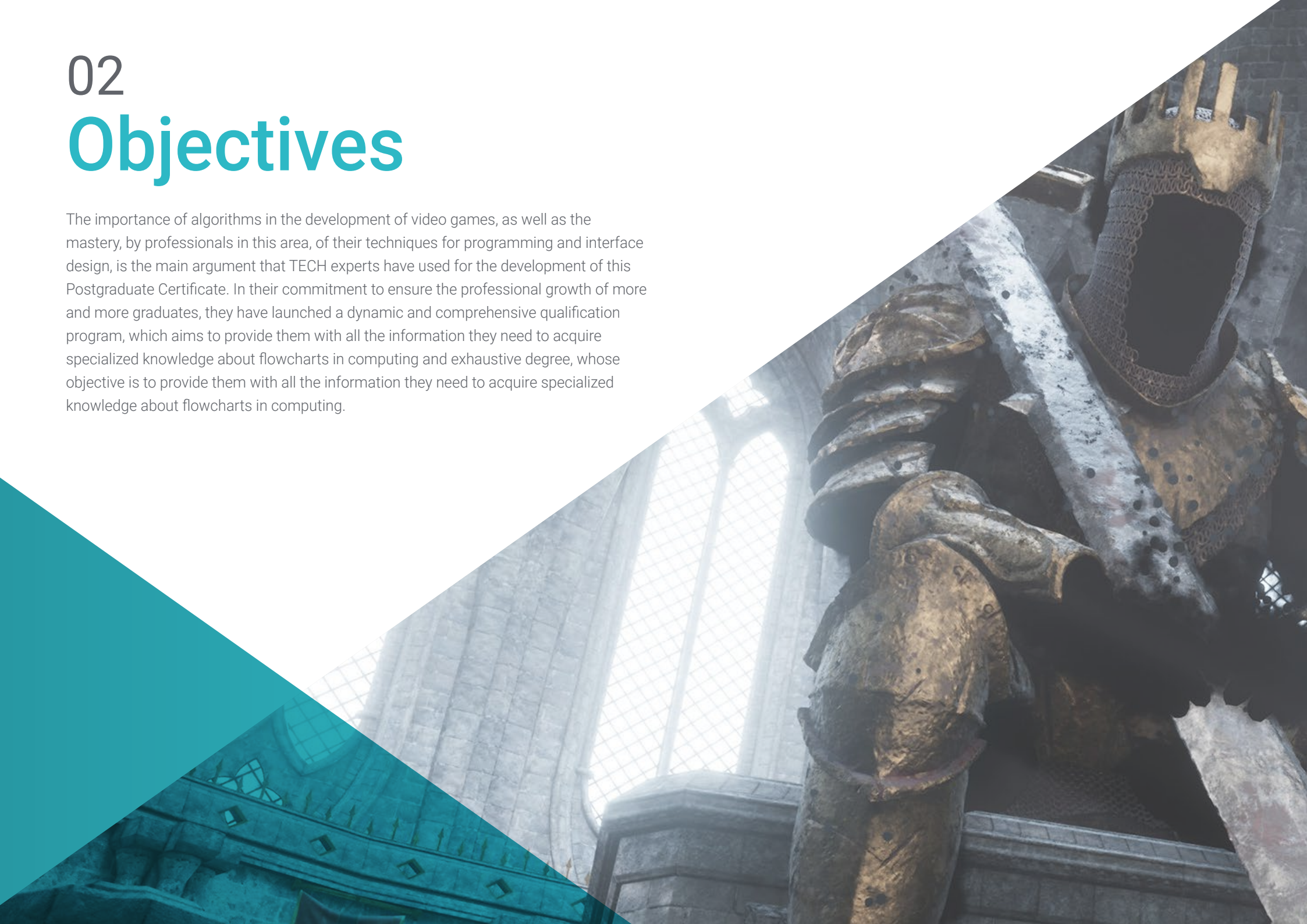
A unique educational opportunity to acquire a specialized domain on the elaboration of flowcharts in computing applied to the video game environment"

General Objectives

- Provide specialized technical knowledge to develop prototypes quickly and efficiently
- Exploit the potential of Unity and the different technologies associated with video game development
- Develop advanced programming techniques and best practices

TECH spends hundreds of hours in each of its programs, with the objective of creating certificates that adapt to the educational needs of its graduates and the requirements of the labor market"

Specific Objectives

- Analyze decision history from the technological point of view of video game evolution
- Plan a sustainable and flexible technological development
- Generate specialized knowledge on Scripting and use of third party Plugins in the development of our content
- Implement physics and animation systems
- Master rapid prototyping and basic shape techniques for structuring scenes and study the proportions of Assets
- Delve into the specific techniques of advanced videogame programming
- Apply the knowledge acquired to develop video games with different technologies such as AR, AI, etc.

Course Management

The faculty of this Postgraduate Certificate is made up of a group of professionals versed in the area of video games and technology with a wide and extensive work experience in the creation and management of large-scale projects The team is also characterized by its human and teaching quality, aspects that are clearly reflected in the exhaustiveness and dynamism with which both the syllabus and the additional material have been elaborated.

A teaching team versed in video game porting will teach you the keys to carry out the cross-platform conversion process"

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

Mr. Martínez Alonso, Sergio

- Senior Unity Developer at NanoReality Games Ltd
- Lead Programmer and Game Designer at NoobO Games
- Teacher in several educational centers such as iFP, Implika or Rockbotic
- Programmer at Stage Clear Studios
- Professor at the University School of Design, Innovation and Technology
- Degree in Computer Engineering from the University of Murcia
- Master's Degree in Video Game Design and Development from the University School of Design, Innovation and Technology

04
Structure and Content

TECH is a pioneer in the international university sector in the use of the Relearning methodology for the development of the theoretical section included in its qualification. This strategy consists in the reiteration of the most important concepts, in such a way that the graduates attend a gradual and natural acquisition of knowledge, without the need to invest extra hours in memorizing In addition, the syllabus is accompanied by a variety of additional material in different formats, favoring the retention of the information for a longer period of time.
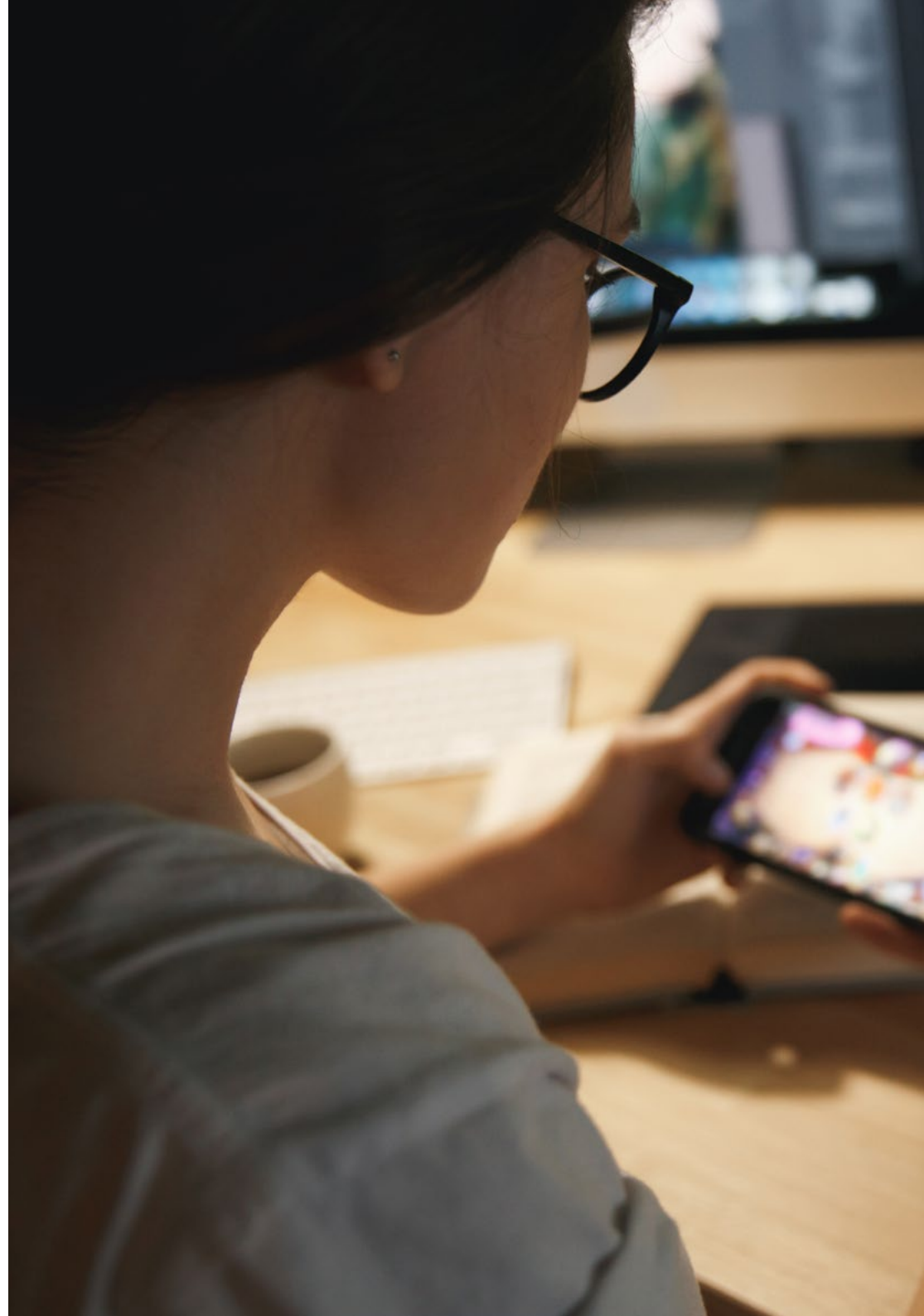
"The program includes a section dedicated to distribution and marketing, so that you can plan effective and efficient strategies when working in 3D video game development"

Module 1. Unity 3D and Artificial Intelligence Proficiency

1.1.   Video Games. Unity 3D

    1.1.1.   Video Games

    1.1.2.   Video Games. Errors and Hits

    1.1.3.   Video Game Applications in Other Areas and Industries

1.2.   Video Game Development. Unity 3D

    1.2.1.   Production Plan and Development Phases

    1.2.2.   Development Methodology

    1.2.3.   Patches and Additional Content

1.3.   Unity 3D

    1.3.1.   Unity 3D. Applications

    1.3.2.   Scripting in Unity 3D

    1.3.3.   Asset Store and Third-Partyplugins

1.4.   Physics, Inputs

    1.4.1.   Input System

    1.4.2.   Physics in Unity 3D

    1.4.3.   Animation and Animator

1.5.   Unity Prototyping

    1.5.1.   Blocking and Colliders

    1.5.2.   Pre-Fabs

    1.5.3.   Scriptable Objects

1.6.   Specific Programming Techniques

    1.6.1.   Singleton Model

    1.6.2.   Loading of Resources in the Execution of Windows Games

    1.6.3.   Performance and Profiler

Artificial intelligence programming will seem simple once you have passed this Postgraduate Certificate"

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.

Certificate

The Postgraduate Certificate in Drawing for Video the Development of Games 3D 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 Algorithmics for 3D Video Game Development** 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 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 Algorithmics for 3D Video Game Development**
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

Algorithmics for 3D Video Game Development

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.

tech
technological university

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