Postgraduate Diploma
Advanced 3D for Animation

tech technological university

Postgraduate Diploma
Advanced 3D
for Animation

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

Website: **www.techtitute.com/pk/videogames/postgraduate-diploma/postgraduate-diploma-advanced-3d-animation**

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01
Introduction

The evolution of animation in the video game sector and digital platforms has opened up a wide range of opportunities for creatives in this area Nowadays, the multiple tools that exist to work on it make it possible to give life to characters with just a series of clicks, unblurring the lines that define the limits of the imagination And in order to facilitate specialization in this field, TECH has developed this austere, dynamic and innovative program This is an online Postgraduate Diploma designed by experts in the video game industry, with which the graduate will not only know in detail the ins and outs and the keys to develop successful 3D animated projects, but with which he will raise his talent to the top of the sector.

" *3D animation is increasingly present in the multimedia and digital sector If you don't want to be left behind, choose TECH and specialize in this field in just 6 months"*

Decades of constant hard work have resulted in the possibility of bringing animated characters to life through increasingly complex, sophisticated, specific and highly realistic techniques. In sectors such as video games, mastering 3D modeling tools applicable to the multiple platforms that exist today, as well as the art of creating without limits to the imagination has become a claim that undoubtedly guarantees a successful working future.

For this reason, and with the aim of facilitating access to a degree through which more and more professionals can specialize in this field, TECH has decided to create this University Expert in Advanced 3D for Animation. This is a very complete and detailed 100% online program, thanks to which, graduates will be able to delve into the management of the most innovative creation techniques, through the exhaustive control of the main software and Assets.

Consequently, over the 6 months of the program, you will be able to perfect your professional skills in a guaranteed way, adapting your profile to the labor requirements of large companies in the industry such as Pixar or DreamWorks.

For this, you will have 450 hours of the best theoretical, practical and additional content, designed by a team of experts in the area based on the most advanced and effective pedagogical methodology. In addition, you will be able to adapt the program in a totally personalized way thanks to the absence of schedules and face-to-face classes. Instead of said classes, you will have access to the online platform whenever you require it, from any device with an internet connection It is, therefore, a unique academic opportunity to become a distinguished and outstanding professional in the 3D animation sector.

This **Postgraduate Diploma in Advanced 3D for Animation** 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 the self-assessment process can be carried out 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 apply for jobs at big companies like Pixar or Sony? This program will give you the keys to become the professional they demand"

> *You will have access to a Virtual Classroom optimized for any device with an internet connection, so that you can take the program from wherever you want, whenever you want"*

An extremely good education opportunity to perfect your skills in character integration in scenarios and tests through simulated practice.

You will work on the use of Polypaint, specifically delving into the mastery of advanced brushes and the handling of default materials.

The program's teaching staff includes professionals from sector 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, students will be assisted by an innovative, interactive video system created by renowned and experienced experts.

02
Objectives

TECH has developed this University Expert with the aim that the graduate can know in detail the ins and outs of 3D animation applicable not only to the field of video games, but to the audiovisual industry in general (film, social networks, art, etc.) For this, you will have the best syllabus and the most sophisticated and effective academic tools, guaranteeing that you will exceed your expectations in less time than you think.

"If one of your objectives is to master lipsync and facial rigging techniques, TECH will provide you with the tools to achieve it with total guarantees"

General Objectives

- Generate specialized knowledge in Virtual Reality

- Determine assets , characters and Virtual Reality integration

- Analyze the importance of audio in video games

- Use the ZBrush program for 3D sculpting

- Develop organic modeling and retopology techniques

- Finalize 3D characters for portfolios

- Animate biped and quadruped 3D characters

- Discover 3D Rigging

- Analyze the importance of the animator's body movement in order to have animation references

Specific Objectives

Module 1. Art and 3D in the Video Game Industry

- Examine 3D mesh creation and image editing software
- Analyze the possible problems and resolution in 3D VR projects
- Be able to define the aesthetic line for the generation of the artistic style of a video game
- Determine the reference sites for the search for aesthetics
- Evaluate the time constraints for the development of an artistic style
- Produce Assets and integrate them into a scenario
- Create characters and integrate them into a scenario
- Value the importance of audio and sounds of a video game

Module 2. Advanced 3D

- 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

Module 3. 3D Animation

- Develop specialized knowledge in the use of 3D animation software
- Determine the similarities and differences between a biped and a quadruped
- Develop several animation cycles
- Internalizing Lip-Sync, Rig facial
- Analyze the differences between animation made for film and for video games
- Develop customized skeletons
- Master camera and shot composition

Do you believe that a 100% online program can be equally or more empowering than a face-to-face one? With this Postgraduate Diploma, you will see that it can"

03

Course Management

For the conformation of the teaching staff of this University Expert, TECH has taken into account several criteria, among them its professional curriculum and the accompanying recommendations Thanks to this, it is possible to offer an academic experience guided by real specialists who are also characterized by a significant human quality It is, therefore, a unique opportunity to grow with experts in the field and based on their successful strategies.

During the 6 months of this program, you will be able to arrange individualized tutorials with the teaching staff"

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
- Professional Master's Degree in Video Game Design and Development from ESNE University
- Master's Degree in Teacher Training from Rey Juan Carlos University
- Specialist in Rigging and 3D Animation Voxel School

04

Structure and Content

In order to guarantee an effective academic experience and highly capacitating for any of the graduates who access this University Expert, TECH has designed its structure based on the latest developments in 3D animation and using the prestigious and efficient Relearning methodology for its development It also includes a variety of high-quality additional material presented in different formats, which will allow you to delve into each aspect of the syllabus in a personalized way.

"You will be able to delve into the constitution of biped and quadruped characters, with special emphasis on the characteristics of each of them when making them walk and run"

Module 1. Art and 3D in the Video Game Industry

1.1.   3D VR Projects

    1.1.1.   3D Mesh Creation Software

    1.1.2.   Image Editing Software

    1.1.3.   Virtual reality

1.2.   Typical Problems, Solutions and Project Needs

    1.2.1.   Project Needs

    1.2.2.   Possible Problems

    1.2.3.   Solutions

1.3.   Esthetic Line Study for the Artistic Style Generation in Video Games: From Game Design to 3D Art Generation

    1.3.1.   Video Game Target Choice. Who Do We Want to Reach?

    1.3.2.   Developer's Artistic Possibilities

    1.3.3.   Final Definition of the Aesthetic Line

1.4.   Aesthetic Benchmarking and Competitor Analysis

    1.4.1.   Pinterest and Similar Sites

    1.4.2.   Creation of a Model Sheet

    1.4.3.   Competitor Search

1.5.   Bible Creation and Briefing

    1.5.1.   Bible Creation

    1.5.2.   Bible Development

    1.5.3.   Briefing Development

1.6.   Scenarios and Assets

    1.6.1.   Production Asset Planning at Production Levels

    1.6.2.   Scenario Design

    1.6.3.   Asset Design

1.7.   Asset Integration in Levels and Tests

    1.7.1.   Integration Process at All Levels

    1.7.2.   Texture

    1.7.3.   Final Touches

1.8.   Characters

    1.8.1.   Character Production Planning

    1.8.2.   Character Design

    1.8.3.   Character Asset Design

1.9.   Character Integration in Scenarios and Tests

    1.9.1.   Character Integration Process in Levels

    1.9.2.   Project Needs

    1.9.3.   Animations

1.10.   3D Video Game Audio

    1.10.1.   Project Dossier Interpretation for Sound Identity Generation of Video Games

    1.10.2.   Composition and Production Processes

    1.10.3.   Soundtrack Design

    1.10.4.   Sound Effect Design

    1.10.5.   Voice Design

Module 2. Advanced 3D

2.1.   Advanced 3D Modeling Techniques
    2.1.1.   Interface Configuration
    2.1.2.   Modeling Observation
    2.1.3.   Modeling in High
    2.1.4.   Organic Modeling for Videogames
    2.1.5.   Advanced 3D Object Mapping
2.2.   Advanced 3D Texturing
    2.2.1.   Substance Painter Interfaces
    2.2.2.   Materials, Alphas and Brush Use
    2.2.3.   Particle Use
2.3.   3D Software and Unreal Engine Export
    2.3.1.   Unreal Engine Integration in Designs
    2.3.2.   3D Model Integration
    2.3.3.   Unreal Engine Texture Application
2.4.   Digital Sculpting
    2.4.1.   Digital Sculpting with ZBrush
    2.4.2.   First Steps in ZBrush
    2.4.3.   Interface, Menus and Navigation
    2.4.4.   Reference Images
    2.4.5.   Full 3D Modeling of Objects in ZBrush
    2.4.6.   Base Mesh Use
    2.4.7.   Part Modeling
    2.4.8.   3D Model Export in ZBrush

2.5.   Polypaint Use
    2.5.1.   Advanced Brushes
    2.5.2.   Texture
    2.5.3.   Default Materials

2.6.   Retopology
    2.6.1.   Rhetopology Use in the Video Game Industry
    2.6.2.   Low-Poly Mesh Creation
    2.6.3.   Software Use for Rhetopology

2.7.   3D Model Positions
    2.7.1.   Reference Image Viewers
    2.7.2.   Transpose Use
    2.7.3.   Transpose Use for Models Composed of Different Pieces

2.8.   3D Model Export
    2.8.1.   3D Model Export
    2.8.2.   Texture Generation for Exportation
    2.8.3.   3D Model Configuration with the Different Materials and Textures
    2.8.4.   Preview of the 3D Model

2.9.   Advanced Working Techniques
    2.9.1.   3D Modeling Workflow
    2.9.2.   3D Modeling Work Process Organization
    2.9.3.   Production Effort Estimates

2.10.   Model Finalization and Export for Other Programs
    2.10.1.   Workflow for Model Finalization
    2.10.2.   ZPlugin Exportation
    2.10.3.   Possible Files. Advantages and Disadvantages

Module 3. 3D Animation

3.1.   Software Operation
    3.1.1.   Information Management and Work Methodology
    3.1.2.   Animation
    3.1.3.   Timing and Weight
    3.1.4.   Animation With Basic Objects
    3.1.5.   Direct and Inverse Cinematics
    3.1.6.   Inverse Kinematics
    3.1.7.   Kinematic Chain

3.2.   Anatomy. Biped Vs. Quadruped
    3.2.1.   Biped
    3.2.2.   Quadruped
    3.2.3.   Walking Cycle
    3.2.4.   Running Cycle

3.3.   Facial Rig and Morpher
    3.3.1.   Facial Language. Lip-Sync, Eyes, Focuses of Attention.
    3.3.2.   Sequence Editing
    3.3.3.   Phonetics. Importance

3.4.   Applied Animation
    3.4.1.   3D Animation for Film and Television
    3.4.2.   Animation for Video Games
    3.4.3.   Animation for Other Applications

3.5.   Motion Capture with Kinect
    3.5.1.   Motion Capture for Animation
    3.5.2.   Sequence of Movements
    3.5.3.   Blender Integration

A program that will give you the keys to master Kinect and surprise with the creation of groundbreaking, creative, technical and different animation projects"

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%
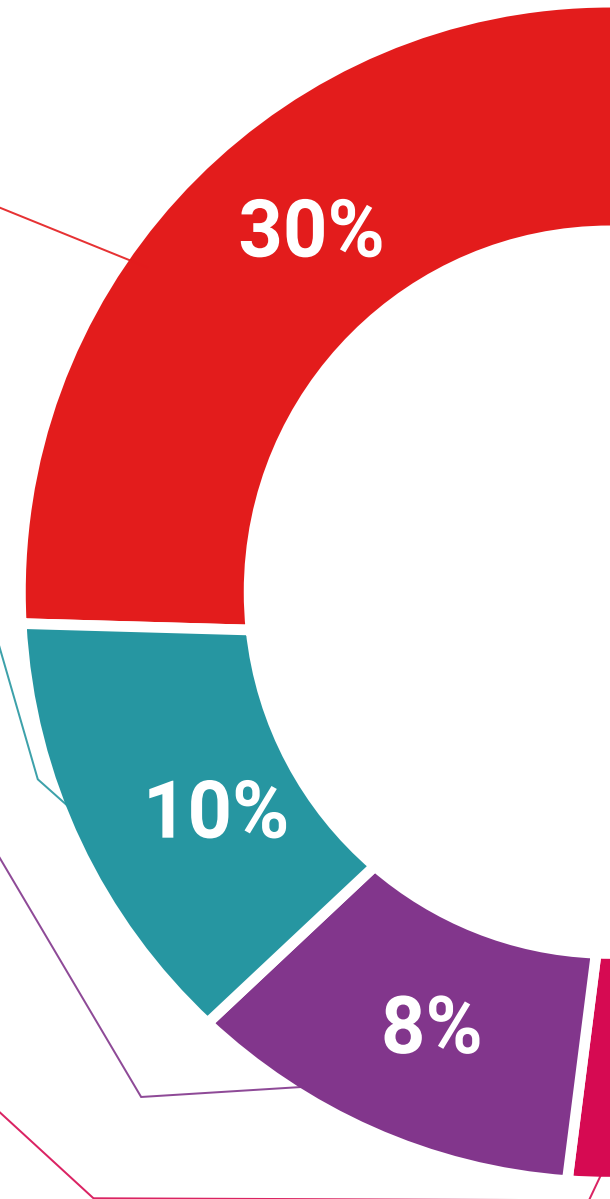
Case Studies

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.

06
Certificate

The Postgraduate Diploma in Advanced 3D for Animation 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 Advanced 3D for Animation** 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 Advanced 3D for Video Animation**

Official N° of Hours: **450 h.**

tech technological university

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

POSTGRADUATE DIPLOMA
in

Advanced 3D for Video Animation

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

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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