

# Postgraduate Diploma

Digital Sculpture of Humanoids,  
Hair, Clothes and Animals





## Postgraduate Diploma

### Digital Sculpture of Humanoids, Hair, Clothes and Animals

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/videogames/postgraduate-diploma/postgraduate-diploma-digital-sculpture-humanoids-hair-clothes-animals](http://www.techtute.com/us/videogames/postgraduate-diploma/postgraduate-diploma-digital-sculpture-humanoids-hair-clothes-animals)

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# 01

# Introduction

One of the most demanded specializations in recent years in the video game and digital entertainment industry is Digital Sculpting. The fact of correctly handling specialized techniques and software; and even working with more artistic formats such as Dynamesh in ZBrush, is a highly valued factor. Achieving the greatest possible realism in projects is only achievable with a thorough knowledge of the tools and their proper use. For this reason, an exclusive training program has been created to delve into the creation of human and animal characters, their hair and clothing through Digital Sculpture. With a duration of 6 months and a 100% online modality that allows flexibility in the study process.







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*Master the latest structural modeling techniques in 3Ds Max or organic modeling in ZBrush. And it achieves high quality patterns"*

*The world of video games continues to evolve in step with the digital revolution. The conceptualization of new styles, have driven the emergence of new trends, and with it, the need to apply techniques that print the realism increasing more and more immersion in this type of virtual experiences.*

*In this Postgraduate Diploma in Digital Sculpting of Humanoids, Hair, Clothes and Animals, the student will acquire knowledge of human anatomy, as well as applied topology for the sculpting necessary for the models to behave correctly and come to life through animation, from the perspective of texturing and integration into video game engines.*

*This program will allow working with more artistic formats such as Dynamesh or using 3D scanning techniques, since the professional will know the conformation of the mesh to perform manual retopologies in various softwares; this being one of the most demanded specializations in recent years.*

*Likewise, you will learn exhaustively how to paint geometries directly with programs such as ZBrush, 3Ds Max and one of the great programs of recent times and used in major film blockbusters, VFX and AAA games such as Substance painter, with which a great photorealistic finish is achieved.*

*All this through TECH's innovative 100% online teaching methodology, which allows students to adapt their reality and current needs to the learning process, deciding the best time and place to study. Accompanied by a high-level teaching staff, who will use numerous multimedia didactic resources such as practical exercises, video techniques, interactive summaries or master classes that will facilitate the entire process.*

The **Postgraduate Diploma in Digital Sculpture of Humanoids, Hair, Clothes and Animals** contains the scientific most complete and up-to-date educational program on the market The most important features include:

- ◆ The development of case studies presented by experts in 3D Modeling and Digital Sculpture
- ◆ The graphic, schematic, and eminently practical contents with which they are created, provide scientific and 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
- ◆ Its special emphasis on innovative methodologies
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ◆ Access to content from any fixed or portable device with an Internet connection



*Master the different texturing techniques, as well as the standard export systems between the various programs, to take advantage of the great qualities of each software"*

“

*Boost your career in the video game industry. This program in Digital Sculpting gives you the skills you need to excel at creating Humanoids, Hair, Clothing and Animals"*

*Digitally sculpting figures and their details like an expert is only possible with proper training. Enroll now and open a range of possibilities for you.*

*Start now this 100% online educational program that will provide dynamic and efficient qualities to your learning process.*

The programs teaching staff includes professionals from the 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 training programmed to train 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

Among the main objectives of this professional training, it is worth mentioning that the student achieves mastery of the techniques, tools and processes involved in the creation of modeling projects in virtual environments, from characters, objects and their details through Digital Sculpture. Thus, at the end of this program you will have all the competencies and skills necessary to perform successfully in the video game industry sculpting characters with quality in every detail.







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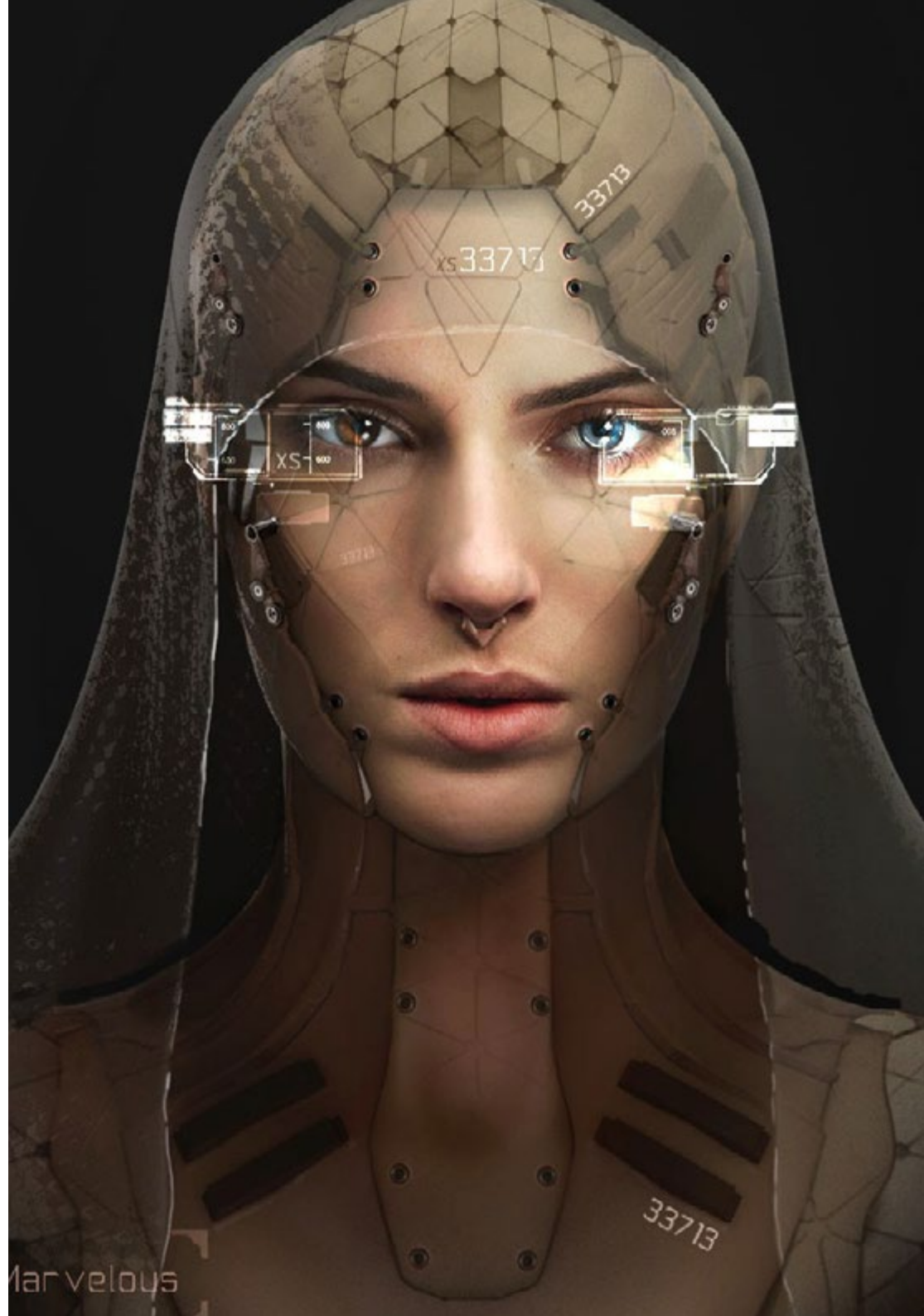
*You are a creative being, you are an outstanding being. Enhance your professional skills even further with the advanced Digital Sculpting skills covered in this program"*



## General Objectives

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- ◆ Understand the need for a good topology at all levels of development and production
- ◆ Knowledge of human and animal anatomy to apply it to modeling, texturing, lighting and rendering processes in an accurate way
- ◆ Meet the demands in hair and clothing creation for video games, film, 3d printing, augmented and virtual reality
- ◆ Handle modeling, texturing and lighting systems in virtual reality systems
- ◆ Know the current systems of the video game industry to deliver great results





## Specific Objectives

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### Module 1. Texturing for Digital Sculpture

- ◆ Using PBR texture and material maps
- ◆ Use texturing modifiers
- ◆ Apply map generating software
- ◆ Create texture baked
- ◆ Manage texturing to generate improvements in our modeling
- ◆ Complex use of the import and export systems between programs
- ◆ Advanced operation of Substance Painter

### Module 2. Machine Creation

- ◆ Create, characterize and model robots, vehicles and cyborgs
- ◆ Handling internal modeling masks
- ◆ Evolve robots, vehicles and *cyborgs*, through the passage of time and their decay by sculpting shapes and using Substance Painter
- ◆ Adapt to biomimicry, science fiction or *cartoon* aesthetics
- ◆ Create a lighting studio in Arnold
- ◆ Handle rendering in photorealistic and non-photorealistic aesthetics
- ◆ Launch wireframe rendering

### Module 3. Humanoid

- ◆ Handle and apply anatomy to human sculpture
- ◆ Know the correct topology of models to be used in 3D animation, video games and 3D printing
- ◆ Characterize and stylize humanized characters
- ◆ Making manual retopologies with 3ds Max, Blender and ZBrush
- ◆ Create groups of people and multiple objects
- ◆ Use predefined and human base grids



*Learn the techniques to create amazing works with the discipline that is expanding and plays a key role in the creation within the video game industry"*

# 03

## Course Management

TECH has selected a high-level teaching staff composed of working professionals to guarantee an adequate learning process. This teaching team will be able to transmit to the student all the keys of Digital Sculpting of Humanoids, Hair, Clothes and Animals, so that they can integrate them in their work practice. Thus, this Postgraduate Diploma not only has an innovative and effective teaching methodology, but also a highly qualified faculty to provide the answers that the student needs about this complex and exciting career.







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*With the guidance of experts, you will perfect your techniques and acquire the necessary skills to become a professional digital sculptor"*



## Management



### Mr. Sequeros Rodríguez, Salvador

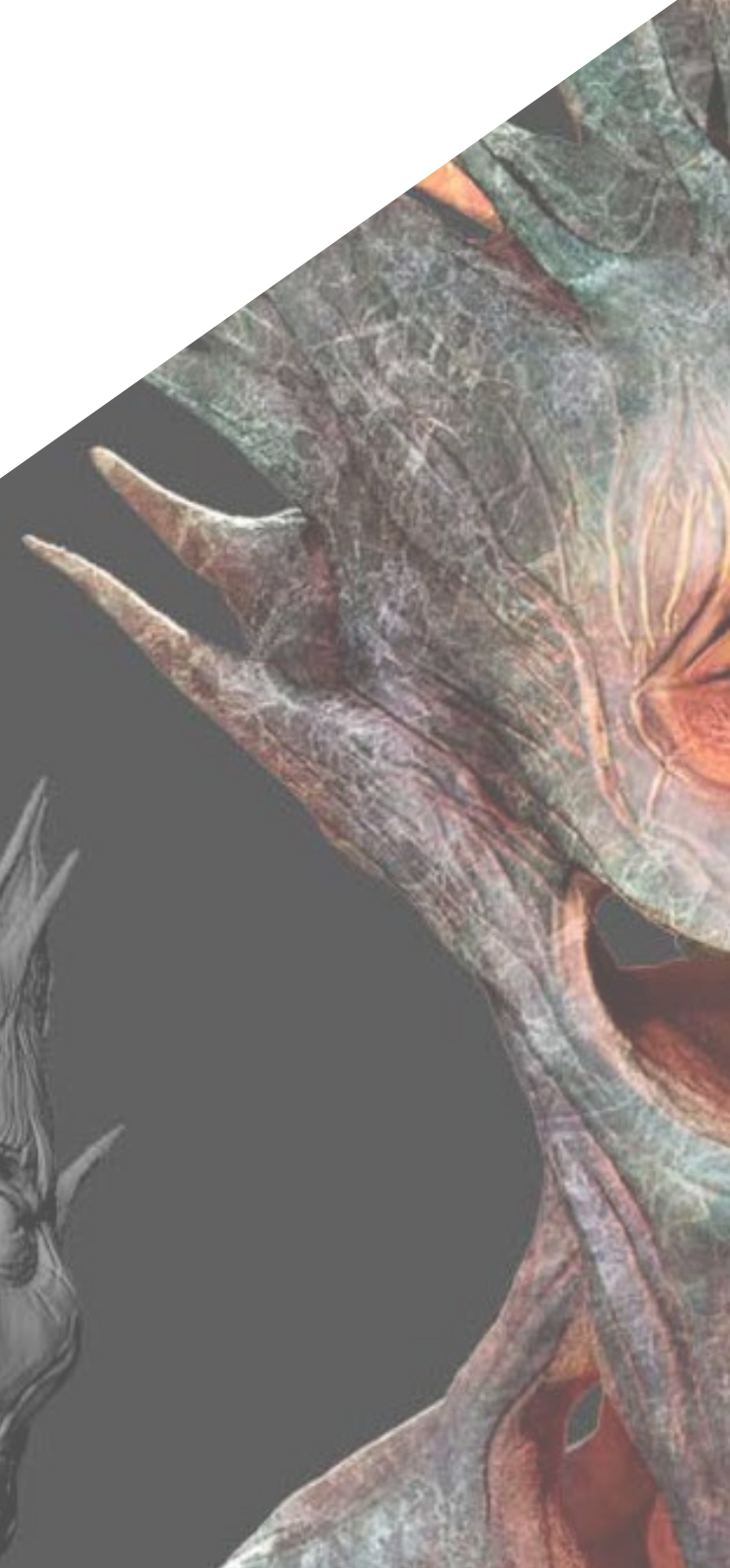
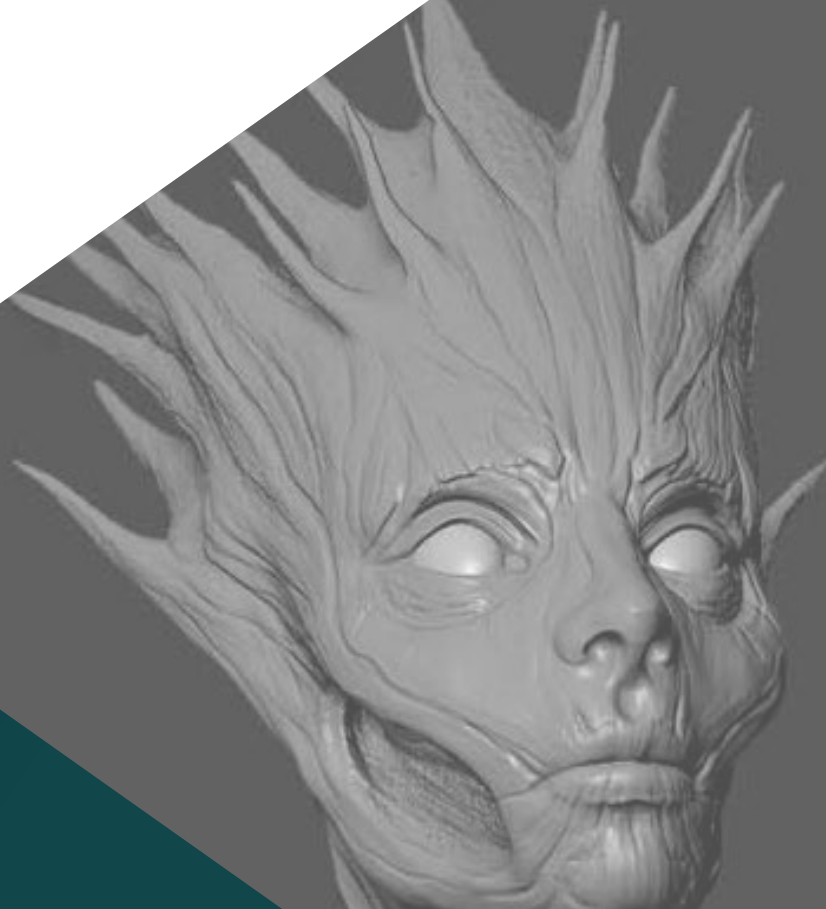
- ♦ Freelance 2D/3D modeler and generalist
- ♦ Concept art and 3D modeling for Slicecore Chicago
- ♦ Videomapping and modeling Rodrigo Tamariz Valladolid
- ♦ Professor of Higher Level Training Cycle 3D Animation Superior School of Image and Sound ESISV Valladolid
- ♦ Professor of Higher Level Training Cycle GFGS 3D Animation European Institute of Design IED Madrid
- ♦ 3D modeling for the falleros Vicente Martinez and Loren Fandos Castellón
- ♦ Master in Computer Graphics, Games and Virtual Reality URJC University. Madrid
- ♦ Bachelor of Fine Arts at the University of Salamanca (specializing in Design and Sculpture)



# 04

## Structure and Content

The contents of this Postgraduate Diploma in Digital Sculpting of Humanoids, Hair, Clothes and Animals has been distributed in 3 specialized modules, through which the professional will acquire the tools and knowledge about: texturing, creation of machines and humanoids. These six months of online training will allow you to work as a designer with 3D software and shape characters and objects digitally, modeling them with the computer in the same way that a sculptor shapes his figures with his hands.







“

*You will open your vision of styles and genres, with the study of the evolution of concepts through the carving of shapes and texturing elements in Substance Painter”*

## Module 1. Texturing for Digital Sculpture

- 1.1. Texturing
  - 1.1.1. Texture Modifiers
  - 1.1.2. Compact Systems
  - 1.1.3. Slate Node Hierarchy
- 1.2. Materials
  - 1.2.1. ID
  - 1.2.2. Photorealistic PBR
  - 1.2.3. No Photorealistic Cartoon
- 1.3. PBR Textures
  - 1.3.1. Procedural Textures
  - 1.3.2. Color, Albedo and DiffuseMaps
  - 1.3.3. Opacity and Specular
- 1.4. Mesh Improvements
  - 1.4.1. Map of Normal
  - 1.4.2. Displacement Map
  - 1.4.3. Vector Maps
- 1.5. Texture Managers
  - 1.5.1. Photoshop
  - 1.5.2. Materialize and Online Systems
  - 1.5.3. Texture Scanning
- 1.6. UVW and Baking
  - 1.6.1. Hard SurfaceTextureBaking
  - 1.6.2. Baking Organic Textures
  - 1.6.3. Baking Unions
- 1.7. Exports and Imports
  - 1.7.1. Texture Formats
  - 1.7.2. FBX, OBJ and STL
  - 1.7.3. Subdivision Vs. Dinamesh
- 1.8. Mesh Painting
  - 1.8.1. Viewport Canvas
  - 1.8.2. Polypaint
  - 1.8.3. Spotlight

- 1.9. Substance Painter
  - 1.9.1. Zbrush with Substance Painter
  - 1.9.2. Low Poly with High Poly Texture Maps
  - 1.9.3. Material Treatments
- 1.10. Advanced Substance Painter
  - 1.10.1. Realistic Effects
  - 1.10.2. Improve the *Baked*
  - 1.10.3. SSS Materials, Human Skin

## Module 2. Machine Creation

- 2.1. Robots
  - 2.1.1. Functionality
  - 2.1.2. Character
  - 2.1.3. Motor Skills in its Structure
- 2.2. Robot Despiece
  - 2.2.1. IMM and Chisel Brushes
  - 2.2.2. Insert Mesh and Nanomesh
  - 2.2.3. Zmodeler in ZBrush
- 2.3. Cyborg
  - 2.3.1. Sectioned by Masks
  - 2.3.2. Trim Adaptive and Dynamic
  - 2.3.3. Mechanization
- 2.4. Ships and Aircraft
  - 2.4.1. Aerodynamics and Smoothing
  - 2.4.2. Surface Texture
  - 2.4.3. Cleaning of Polygonal Mesh and Details
- 2.5. Land Vehicles
  - 2.5.1. Vehicle Topology
  - 2.5.2. Modeling for Animation
  - 2.5.3. Caterpillars



- 2.6. Passage of Time
  - 2.6.1. Credible Models
  - 2.6.2. Materials Over Time
  - 2.6.3. Oxidations
- 2.7. Accidents
  - 2.7.1. Crashes
  - 2.7.2. Object Fragmentations
  - 2.7.3. Destruction Brushes
- 2.8. Adaptations and Evolution
  - 2.8.1. Biomimicry
  - 2.8.2. Sci-fi Dystopia, Uchronias and Utopias
  - 2.8.3. Cartoon
- 2.9. Realistic Render Hardsurface
  - 2.9.1. Studio Scene
  - 2.9.2. Lights
  - 2.9.3. Physical Camera
- 2.10. NPR Render Hardsurface
  - 2.10.1. Wireframe
  - 2.10.2. Cartoon Shader
  - 2.10.3. Illustration

### Module 3. Humanoid

- 3.1. Human Anatomy for Modeling
  - 3.1.1. Canon of Proportions
  - 3.1.2. Evolution and Functionality
  - 3.1.3. Superficial Muscles and Mobility
- 3.2. Lower Body Topology
  - 3.2.1. Torso
  - 3.2.2. Legs
  - 3.2.3. Feet
- 3.3. Upper Body Topology
  - 3.3.1. Arms and Hands
  - 3.3.2. Neck
  - 3.3.3. Head and Face and Inside Mouth
- 3.4. Characterized and Stylized Characters
  - 3.4.1. Details with Organic Modeling
  - 3.4.2. Anatomy Characterization
  - 3.4.3. Styling
- 3.5. Expressions
  - 3.5.1. Facial Animations and *Layer*
  - 3.5.2. Morpher
  - 3.5.3. Texture Animation
- 3.6. Pose
  - 3.6.1. Character Psychology and Relaxation
  - 3.6.2. Rig with Zpheras
  - 3.6.3. Posed with Motion Capture
- 3.7. Characterizations
  - 3.7.1. Tattoos
  - 3.7.2. Scars
  - 3.7.3. Wrinkles, Freckles and Marks
- 3.8. Manual Retopology
  - 3.8.1. in 3ds Max
  - 3.8.2. Blender
  - 3.8.3. Zbrush and Projections
- 3.9. Predefined
  - 3.9.1. Fuse
  - 3.9.2. Vroid
  - 3.9.3. MetaHuman
- 3.10. Crowds and Repetitive Spaces
  - 3.10.1. Scatter
  - 3.10.2. Proxys
  - 3.10.3. Object Groups

# 05

# Methodology

This training program provides you with 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.







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*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"*

## At TECH we use the Case Method

Our program offers a revolutionary method of skills and knowledge development. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

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*At TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world"*



*We are the first online university to combine Harvard Business School case studies with a 100% online learning system based on repetition.*





### A learning method that is different and innovative.

This intensive program in Video Games at TECH Global University prepares you to face all the challenges in this area, both nationally and internationally. We are committed to promoting your personal and professional growth, the best way to strive for success, that is why at TECH Global University you will use Harvard case studies, with which we have a strategic agreement that allows us, to offer you material from the best university in the world.



*Our program prepares you to face new challenges in uncertain environments and achieve success in your career”*

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

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. Throughout 4 years, you will be presented with multiple real cases. You will have to combine all your knowledge, and research, argue, and defend your ideas and decisions.



## Relearning Methodology

Our University is the first in the world to combine Harvard University case studies with a 100%-online learning system based on repetition, which combines different teaching elements in each lesson.

We enhance Harvard case studies with the best 100% online teaching method: Relearning.

*In 2019, we obtained the best learning results of all Spanish-language 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 Spanish-speaking university qualified 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 Spanish online university indicators.



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.



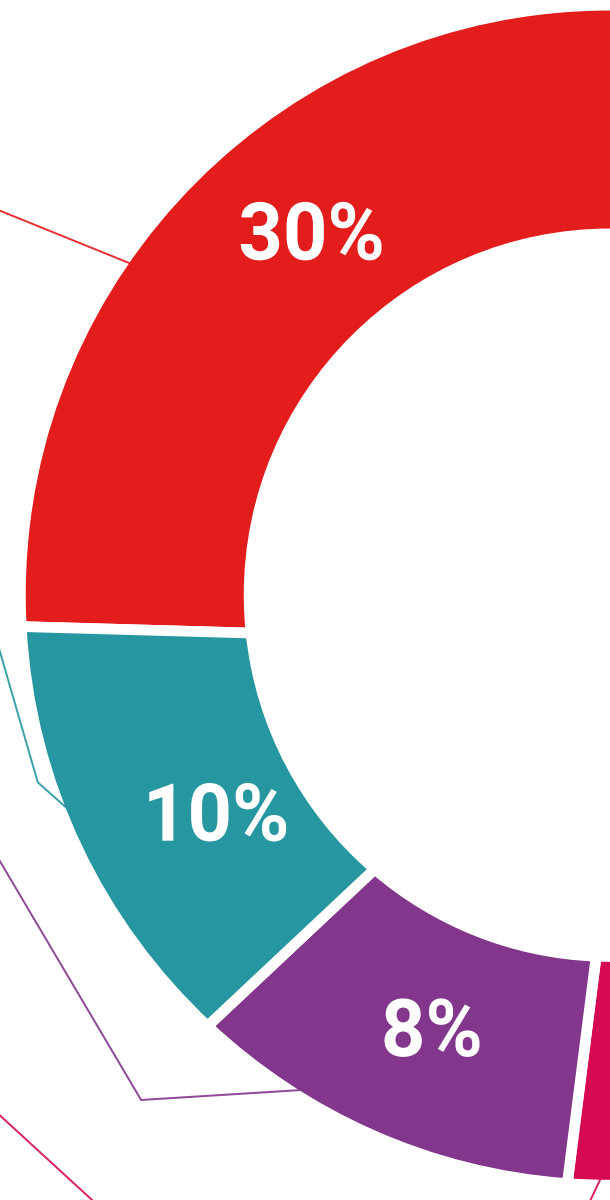
### Practising Skills and Abilities

They will carry out activities to develop specific competencies and skills in each thematic 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.





#### Case Studies

They will complete a selection of the best case studies in the field used at Harvard. Cases that are presented, analyzed, and supervised by the best senior management specialists in Latin America.



#### 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 multimedia content presentation training Exclusive system was awarded by Microsoft as a "European Success Story".



#### Testing & Re-testing

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 your goals.





# 06 Certificate

The Postgraduate Diploma in Digital Sculpture of Humanoids, Hair, Clothes and Animals guarantees, in addition to the most rigorous and update training, access to a Postgraduate Diploma issued by TECH Global University.





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*Successfully complete this training and receive your university degree without travel or laborious paperwork”*

This program will allow you to obtain your **Postgraduate Diploma in Digital Sculpture of Humanoids, Hair, Clothes and Animals** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Digital Sculpture of Humanoids, Hair, Clothes and Animals**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**



future  
health confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present  
development languages  
classroom



## Postgraduate Diploma Digital Sculpture of Humanoids, Hair, Clothes and Animals

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