

Postgraduate Diploma

Digital Sculpture in Humanoids, Hair, Apparel and Animals





Postgraduate Diploma Digital Sculpture in Humanoids, Hair, Apparel 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/design/postgraduate-diploma/postgraduate-diploma-digital-sculpture-humanoids-hair-apparel-animals

Index

01

Introduction

p. 4

02

Objectives

p. 8

03

Course Management

p. 12

04

Structure and Content

p. 16

05

Methodology

p. 22

06

Certificate

p. 30

01

Introduction

It's hard to find something in virtual environments for entertainment or digital advertising that doesn't involve 3D modeling or digital sculpting in its creation process. All the characters, objects and *Props* of video games, as well as those in films depicting fantastical worlds, superheroes or animation, and even toys or industrial pieces, as well as figures used in *Merchandising* have been created under concepts of digital sculpture. A fundamental discipline in modern environments with diverse professional opportunities; therefore, this course specializes in the creation of *Humanoids*, hair, clothing and animals during 6 months of training through the *Relearning* methodology in a fully online system.



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In this program, the professional will develop structural modeling techniques in 3D Max or organic modeling in ZBrush to obtain high quality patterns”

The digital revolution, together with the conceptualization of new styles and organizational dynamics, have brought new trends, which makes it essential for experts to know how to differentiate techniques and processes that are appropriate for each project. In this Postgraduate Diploma in Digital Sculpture of Humanoids, Hair, Apparel and Animals, students acquire knowledge of human anatomy as well as the topology of sculpting required for models to behave correctly and come to life through animation; all this in the context of texturing, integration into video game engines and 3D printing.

This program will allow designers to work with more artistic formats such as *Dynamesh* or using 3D scanning techniques, since the professional will already be familiar with mesh conformation in order to perform manual retopologies with a variety of *software*; this is one of the most demanded specializations in recent years.

Likewise, you will learn how to paint geometry directly and in detail with programs such as *ZBrush*, *3D Max*, and one of the great programs of recent times used in major film blockbusters, VFX and AAA games: *Substance Painter*, which is employed to obtain excellent photorealistic finishes.

All this through TECH Global University's innovative 100% online teaching methodology that allows students to adapt their reality and current needs to the learning process and in which they decide the best time and place to study. Accompanied by a highly experienced teaching staff that uses numerous multimedia resources such as practical exercises, video techniques, interactive summaries and lectures to facilitate the process.

This **Postgraduate Diploma in Digital Sculpture in Humanoids, Apparel, Apparel and Animals** contains the most complete and up-to-date educational program on the market. Its most notable features are:

- ◆ Practical cases presented by experts in 3D modeling and digital sculpture.
- ◆ 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



The automotive, model and toy building, video game, film and advertising industries are constantly looking for experts in the field of Hard Surface, so training in this field opens a window into the future"

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If you want to add a high quality academic program to your professional profile, don't wait to enroll in this program in Digital Sculpting where you will learn the techniques for the creation of Humanoids, Hair, Apparel and Animals"

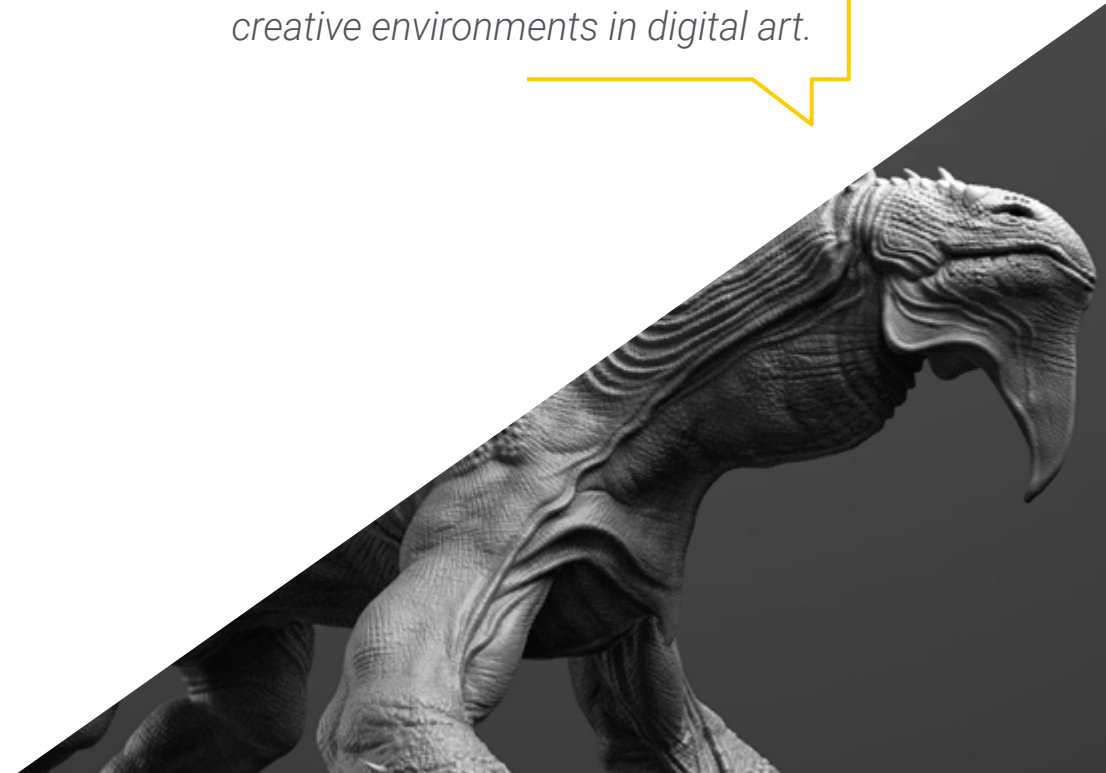
The program's teaching staff includes professionals from the sector who contribute their work experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

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 immersion 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 throughout the program. This will be done with the help of an innovative system of interactive videos made by renowned experts.

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

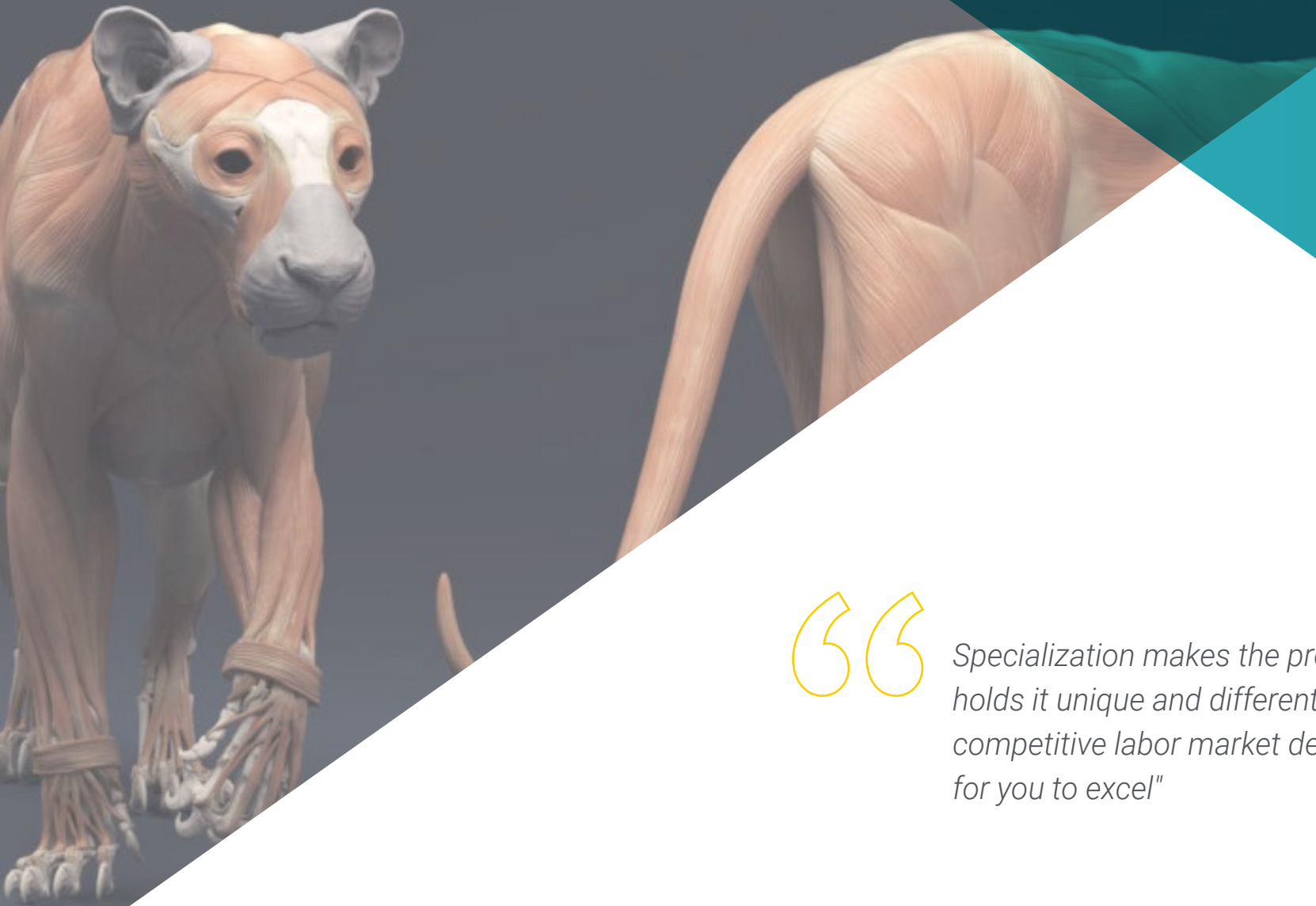
A 100% online educational program that provides dynamic and efficient qualities for the learning process with creative environments in digital art.



02 Objectives

The main objective of this professional program is to prepare students to master the techniques, tools and processes involved in the creation of modeling projects in virtual environments through lighting, 3D, VR, AR printing, and Photogrammetry. At the end of this course, you will have all the competencies and skills you need to perform successfully in the digital sculpture industry.





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Specialization makes the professional who holds it unique and different, and today's competitive labor market demands just that for you to excel"



General Objectives

- ◆ Understand the necessity of having an adequate topology at all levels of development and production
- ◆ Understand human and animal anatomy to apply it to modeling, texturing, lighting and rendering processes in a precise way
- ◆ Meet the demands in the creation of hair and clothes for video games, cinema, 3D printing, augmented and virtual reality
- ◆ Operate modeling, texturing and lighting systems in virtual reality systems.
- ◆ Know the current demands of the movie and video game industries in order to offer the best results





Specific Objectives

Module 1. Texturing for Digital Sculpture

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

Module 2. Machine Creation

- ◆ Create, characterize and model robots, vehicles and cyborgs
- ◆ Manage internal modeling masks
- ◆ Develop robots, vehicles and cyborgs through time and study their decay by sculpting shapes and using *Substance Painter*
- ◆ Adapt to biomimicry, science fiction or *cartoonaesthetics*
- ◆ Create a lighting studio using *Arnold*
- ◆ Master rendering in photorealistic and non-photorealistic aesthetics.
- ◆ Launch *Wireframerender*

Module 3. *Humanoid*

- ◆ Manage and apply anatomical knowledge to human sculpture
- ◆ Learn the correct topology of models to be used in 3D animation, video games and 3D printing
- ◆ Characterize and stylize humanized characters
- ◆ Produce manual retologies with 3D Max, Blender and ZBrush
- ◆ Create groups of people and multiple objects
- ◆ Use predefined and human base meshes



Digital sculpture is a growing discipline that plays a key role in creative positions within of the film and video game industries. Learn the techniques you need to create amazing works"

03

Course Management

To ensure that the learning process is developed properly, TECH has selected a high-level teaching staff composed of practising professionals. This teaching team will ensure that all the contents on Model Lighting and 3D Printing, Hair, Apparel and Animals can be learned effectively, so that students can integrate them into their working lives. As such, this Postgraduate Diploma offers not only an innovative and effective teaching methodology, but also a highly qualified faculty that can provide the answers students need in this complex and exciting career path.





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

Management



Mr. Sequeros Rodríguez, Salvador

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



04

Structure and Content

The contents of this Postgraduate Diploma in Digital Sculpture in Humanoids, Hair, Apparel and Animals have been distributed into 3 specialized modules, through which the professional will acquire the tools and knowledge related to texturing, creation of machines and *humanoids*. Six months of online training through an efficient methodology will enable you to work as a designer with 3D *software*, shape characters and objects digitally, and allow you to model them with the computer in the same way that a sculptor shapes his figures with his hands.





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Working in virtual environments opens up a range of possibilities. This course gives you the opportunity to learn specialized techniques in Digital Sculpture for Humanoids, Hair, Apparel and Animals”

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. Non-Photorealistic *Cartoon*
- 1.3. PBR Textures
 - 1.3.1. Procedural Textures
 - 1.3.2. Color Maps, Albedo and Diffuse
 - 1.3.3. Opacity and Specularity
- 1.4. Mesh Enhancements
 - 1.4.1. Normal Mapping
 - 1.4.2. Displacement Mapping
 - 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 *Banking*
 - 1.6.1. *Baked Hard Surface textures*
 - 1.6.2. *Baked Organic Textures*
 - 1.6.3. *Baking Joints*





- 1.7. Exportations and Importations
 - 1.7.1. Texture Formats
 - 1.7.2. FBX, OBJ and STL
 - 1.7.3. Subdivision Vs. Dinamesh
- 1.8. Mesh Paintings
 - 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 Texture Maps with High Poly Detail
 - 1.9.3. Material Processing
- 1.10. Substance Painter - Advanced
 - 1.10.1. Realistic Effects
 - 1.10.2. Improving *Baking*
 - 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 their Structure
- 2.2. Robot Exploded View
 - 2.2.1. IMM and Chisel Brushes
 - 2.2.2. Insert Mesh and Nanomesh
 - 2.2.3. ZModeler in ZBrush
- 2.3. Cybord
 - 2.3.1. Sectioned by Means of 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 Polygon 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 in Time
 - 2.6.3. Oxidants
- 2.7. Accidents
 - 2.7.1. Collisions
 - 2.7.2. Object Fragmentation
 - 2.7.3. Destruction Brushes
- 2.8. Adaptations and Evolution
 - 2.8.1. Biomimicry
 - 2.8.2. Sci-fi, Dystopias, Uchronies and Utopias
 - 2.8.3. Cartoon
- 2.9. Render Realistic *Hardsurface*
 - 2.9.1. Studio Scene
 - 2.9.2. Light
 - 2.9.3. Physical Camera
- 2.10. Render NPR *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. Trunk
 - 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, Face and Mouth Interior
- 3.4. Characterized and Stylized Characters
 - 3.4.1. Detailing with Organic Modeling
 - 3.4.2. Characterization of Anatomies
 - 3.4.3. Styling
- 3.5. Expressions
 - 3.5.1. Facial Animation and *Layer*
 - 3.5.2. *Morpher*
 - 3.5.3. Texture-Based Animation
- 3.6. Posing
 - 3.6.1. Character Psychology and Relaxation
 - 3.6.2. *Rig* with ZSpheres
 - 3.6.3. Posing with *Motion Capture*



- 3.7. Characterization
 - 3.7.1. Tattoos
 - 3.7.2. Scars
 - 3.7.3. Wrinkles, Freckles and Spots
- 3.8. Manual Retopology
 - 3.8.1. In 3D 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 Recurring Spaces
 - 3.10.1. Scatter
 - 3.10.2. Proxys
 - 3.10.3. Groups of Objects

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You will learn the basics of 3D design to give life to characters and objects with the most widely used software in the industry and make your way in a demanded job field"

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.



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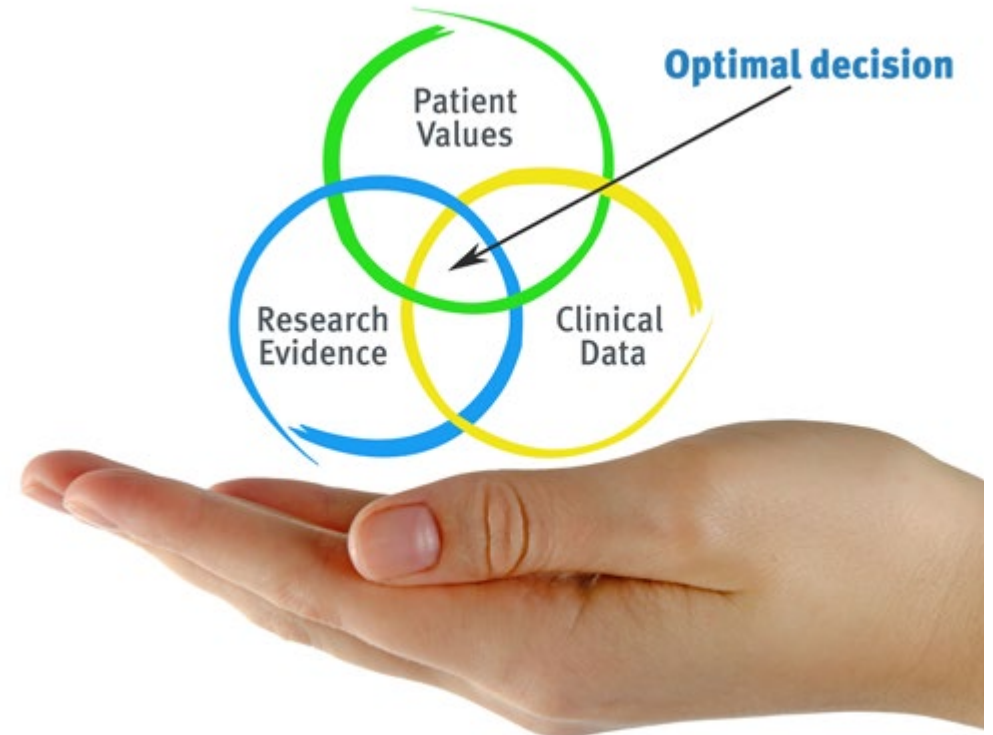
Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

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.

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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 is the most widely used learning system in the best faculties in the world. 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 we face in the case method, an action-oriented learning method. Throughout the program, the studies will be presented with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their 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.



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.

With this methodology we have 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, markets, and financial 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 that we are experiencing.



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

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 Digital Sculpture in Humanoids, Hair, Apparel and Animals guarantees students, in addition to the most rigorous and up-to-date education, access to a qualification issued by TECH Global University.



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

This program will allow you to obtain your **Postgraduate Diploma in Digital Sculpture in Humanoids, Hair, Apparel 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 in Humanoids, Hair, Apparel 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
online training
development language
classroom



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Postgraduate Diploma

Digital Sculpture in Humanoids, Hair, Apparel and Animals