Postgraduate Diploma
3D Human Modeling

tech global university

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Postgraduate Diploma
3D Human Modeling

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

Website: www.techtitute.com/us/information-technology/postgraduate-diploma/postgraduate-diploma-3d-human-

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Introduction

In order to be a great professional, you have to delve into and master the basics to the maximum, the better you know what you do, the further you can go. Human anatomy is key to understand how the body works and take advantage of that to make great models. In this qualification the graduate will master, online, the knowledge about the anatomy of the body, knowing every detail to get the most out of it. To do so, the student will learn different ways of modeling to get to build the character of their dreams, understanding to the maximum the importance of a good topology and what influences this at all levels of a production.

In this Postgraduate Diploma you will delve into Substance and you will be able to do whatever you propose to do in the best possible way"

Knowing every detail of 3D human modeling to get the most out of it is the difference between a mediocre artist and a great artist. In order to do so, you have to have the basics very well established. In the industry, it is very common to have to solve problems in other departments because the work is not in a good condition, so it is essential to fully understand the importance of a good topology and how this influences all levels of a production.

This program aims to help professionals become capable of creating a character for video games as well as for the biggest Hollywood productions. To do so, the student will learn how to use Mari, the standard software in the film industry. This will give them an advantage over many artists in the industry, making them stand out from the rest. In turn, *Substance* is the standard for video game texturing and, therefore, knowing and mastering it is something that the graduate has to do to be able to do whatever they set out to do in the best possible way.

Additionally, as it is an online program, students are not conditioned by fixed schedules or the need to move to another physical location. You will have access to a rich content that will help you reach the 3D modeling elite at any time of the day, balancing, at your own pace, your work and personal life with your academic life.

This **Postgraduate Diploma in 3D Human Modeling** contains the most complete and up-to-date educational program on the market. Its most notable features are:

- The development of practical cases presented by experts in 3D human modeling
- 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
- 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

This qualification will provide you with the necessary updating of skills in a constantly evolving environment"

Be as professional as possible, understanding as much as you can the importance of a good topology and how this influences all levels of a

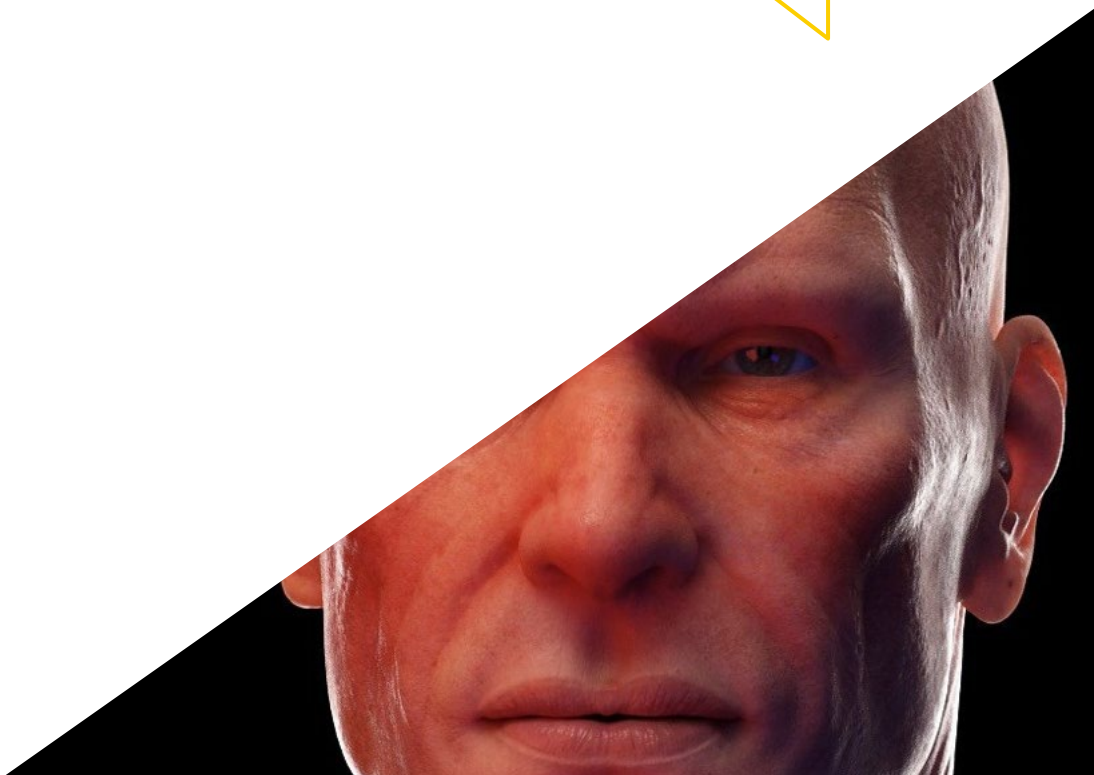
Delve into the human anatomy, a key aspect of understanding how the body works, and use it to make great models.

By learning to use Mari, you will have an advantage over many artists in the industry, making you stand out from the

The program includes, in its teaching staff, professionals from the sector who contribute to this training with their work experience, as well as renowned specialists from reference societies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will allow the professional a situated and contextual learning, that is, a simulated environment that will provide immersive education programmed to learn in real situations.

The design of this program focuses on Problem-Based Learning, by means of which the professional must try to solve the different situations of professional practice that may arise throughout the academic course. For this purpose, students will be assisted by an innovative interactive video system developed by renowned experts.



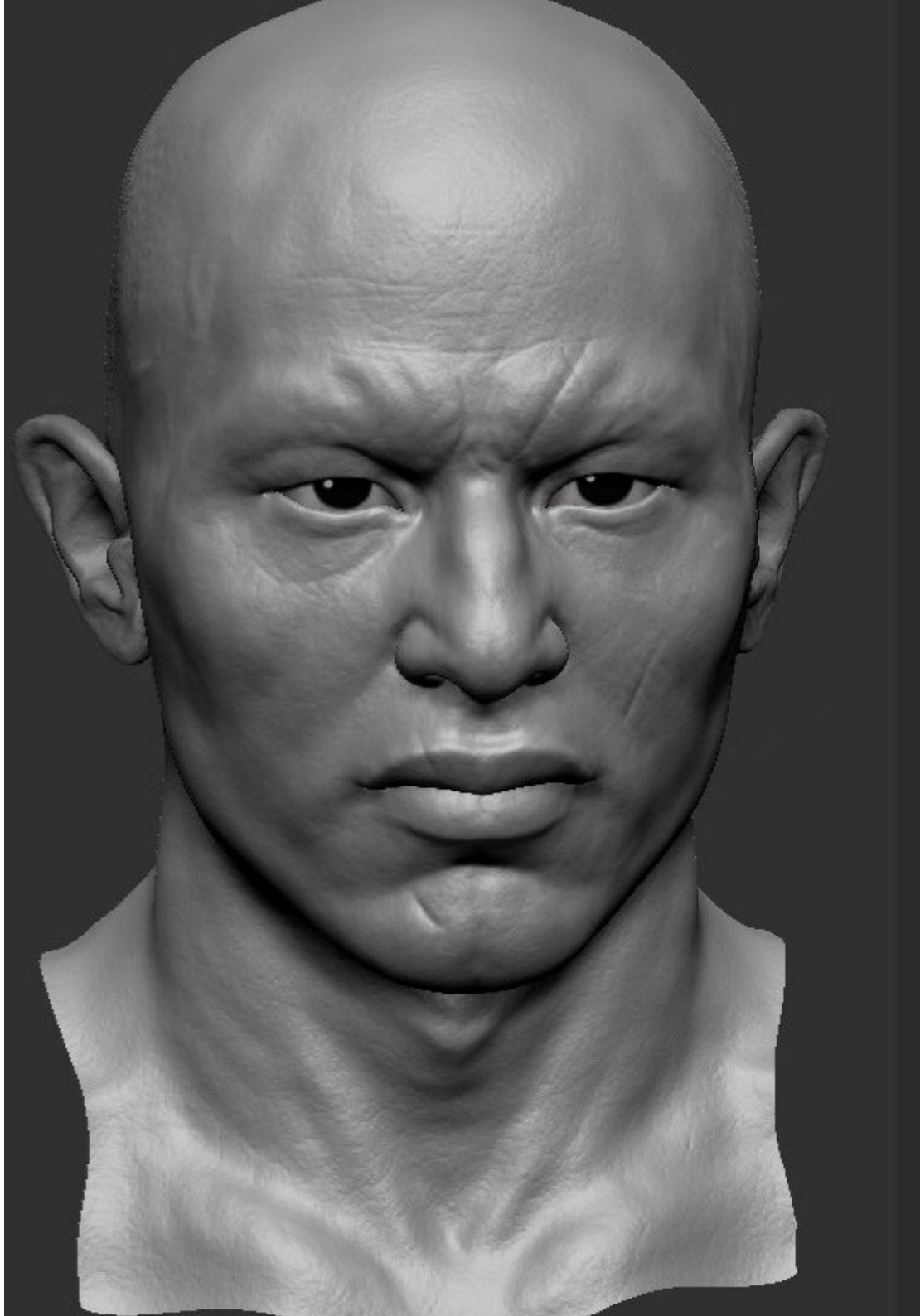
The program's design will allow the graduate to expand their knowledge in human anatomy in order to develop hyper-realistic characters, through the mastery of retopology, UVS and texturing to perfect the models created. All this, under the creation of an optimal and dynamic work, acquiring the most demanded skills and knowledge in the 3D industry.

You will delve into advanced full body and facial retopology in Maya"

General Objectives

- Expand knowledge of human and animal anatomy in order to develop hyper-realistic creatures
- Master the retopology, UVS and texturing to perfect the models created
- Create an optimal and dynamic workflow to work more efficiently with 3D modeling
- Have the skills and knowledge most in demand in the 3D industry to be able to apply for the best jobs

You can become a 3D artist in film, advertising and video game companies and a great digital sculptor who can



Specific Objectives

Module 1. Anatomy

- Investigate both male and female human anatomy
- Develop the highly detailed human body
- Hyper-realistic face sculpting

Module 2. Retopology and Maya Modeling

- Master the different professional sculpting techniques
- Create advanced full body and face retopology in Maya
- Learn how to apply details using *Alphas* and brushes in ZBrush

Module 3. UVs and Texturing with Allegorithmic Substance Painter and Mari

- Study the most optimal form of 'UVs in Maya and UDIM systems
- Develop the knowledge necessary to texture in Substance Painter for video games
- Gain knowledge of texturing in Mari for hyper-realistic models
- Learn how to create XYZ textures and displacement maps on our models
- Delve into the import of our textures in Maya

Course Management

TECH has selected teachers who have extensive experience in different types of design work for both the video game industry and for animation and scene creation in various projects.

Thanks to this professional experience, the student benefits from studying a theory adapted to the realities of today's market, mastering the aspects most in demand by companies and that are not taught in traditional computer science faculties.

You will learn from the best how to create XYZ textures and displacement maps on

International Guest Director

Joshua Singh is a leading professional with over 20 years of experience in the **video game** industry, internationally recognized for his skills in **art direction** and **visual development**. With solid training in **software** such as **Unreal, Unity, Maya, ZBrush, Substance Painter** and **Adobe Photoshop**, he has made a significant mark in the field of **game design**. In addition, his experience spans **visual development** in both **2D** and **3D**, and is distinguished by his ability to collaboratively and thoughtfully solve problems in **production environments**.

In addition, as **Art Director at Marvel Entertainment**, he has collaborated with and guided elite teams of artists, ensuring that the artwork meets the required quality standards. He has also served as **Lead Character Artist** at **Proletariat Inc**. where he has created a safe environment for his team and has been responsible for all character assets in **video games**.

With an outstanding track record, including **leadership roles** at companies such as **Wildlife Studios** and **Wavedash Games**, Joshua Singh has been an advocate for artistic development and a mentor to many in the industry. Not to mention his time at large and well-known companies, such as **Blizzard Entertainment** and **Riot Games**, where he has worked as a **Senior Character Artist**. And, among his most relevant projects, stands out for his participation in hugely successful **video games**, including **Marvel's Spider-Man 2, League of Legends** and **Overwatch**.

Thus, his ability to unify the vision of **Product, Engineering and Art** has been fundamental to the success of numerous projects. Beyond his work in the industry, he has shared his experience as an instructor at the prestigious **Gnomon School of VFX** and has been a presenter at renowned events such as the **Tribeca Games Festival** and the **ZBrush Summit**.

D. Singh, Joshua

- Art Director at Marvel Entertainment, California, USA
- Lead Character Artist at Proletariat Inc
- Art Director at Wildlife Studios
- Art Director at Wavedash Games
- Senior Character Artist at Riot Games
- Senior Character Artist at Blizzard Entertainment
- Artist at Iron Lore Entertainment
- 3D Artist at Sensory Sweep Studios
- Senior Artist at Wahoo Studios/Ninja Bee
- General Studies from Dixie State University
- Degree in Graphic Design from Eagle Gate Technical College

Thanks to TECH, you will be able to learn with the best professionals in the world"

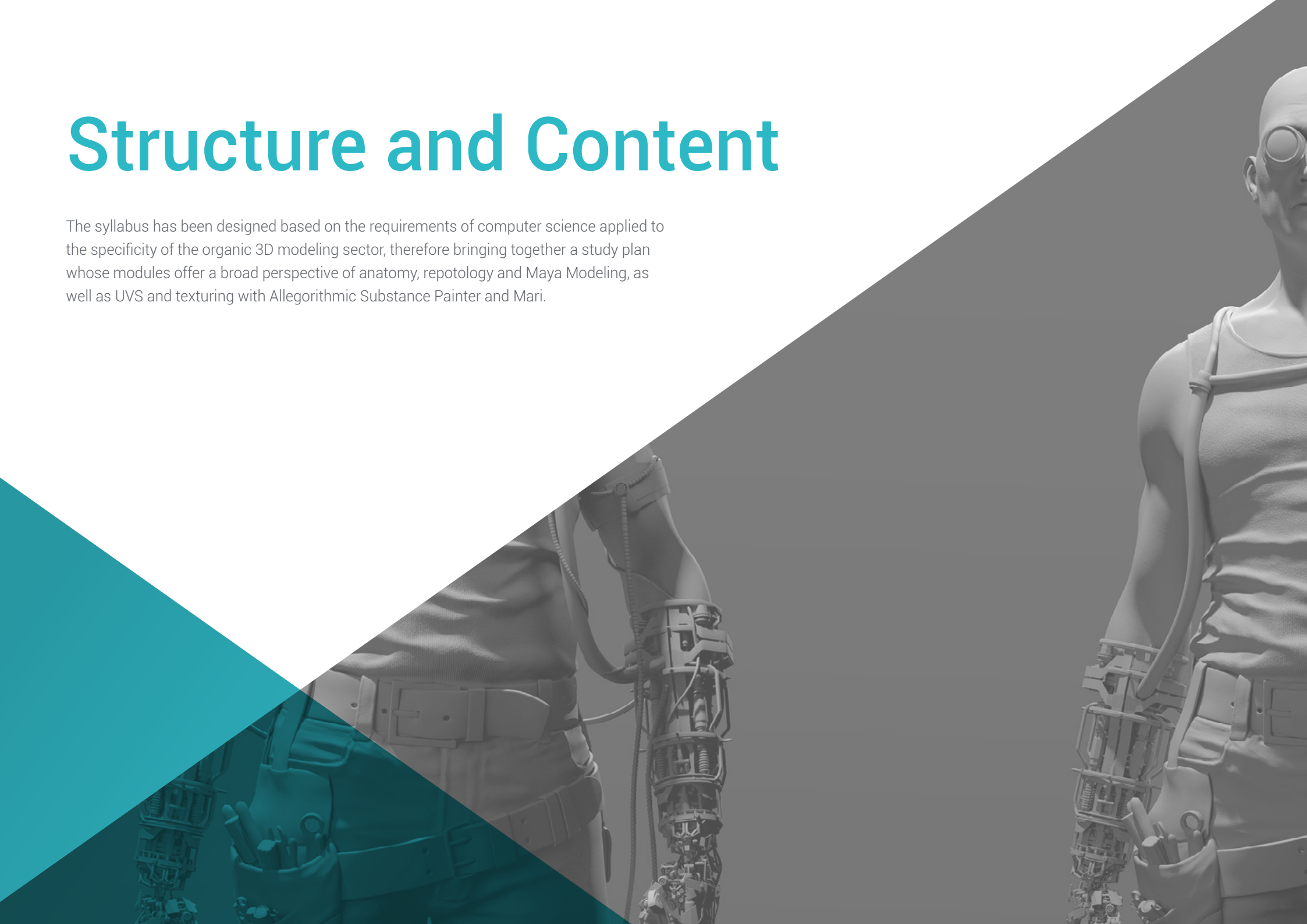
Management

Ms. Gómez Sanz, Carla

- Concept Artist, 3D Modeler and Shading in Timeless Games Inc
- Vignettes and animations design consultant for commercial proposals in Spanish multinationals
- 3D Specialist at Blue Pixel 3D
- Advanced Technician in 3D Animation, video games and interactive environments at CEV School of Communication, Image and Sound
- Master's Degree and Bachelor's Degree in 3D Art, Animation and Visual Effects for video games and cinema at CEV School of Communication, Image and Sound

Structure and Content

The syllabus has been designed based on the requirements of computer science applied to the specificity of the organic 3D modeling sector, therefore bringing together a study plan whose modules offer a broad perspective of anatomy, repotology and Maya Modeling, as well as UVS and texturing with Allegorithmic Substance Painter and Mari.



You will work in depth with Mari, a standard software in the film industry, and you will get the famous hyper-realistic models that appear in the film industry"

Module 1. Anatomy

1.1. General Skeletal Masses, Proportions
- 1.1.1. Bones
- 1.1.2. The Human Face
- 1.1.3. Anatomical Canons

1.2. Anatomical Differences between Genders and Sizes
- 1.2.1. Shapes Applied to Characters
- 1.2.2. Curves and Straight Lines
- 1.2.3. Behavior of Bones, Muscles and Skin

1.3. The Head
- 1.3.1. The Skull
- 1.3.2. Muscles of the Head
- 1.3.3. Layers: Skin, Bone and Muscle Facial Expressions

1.4. The Torso
- 1.4.1. Torso Musculature
- 1.4.2. Central Axis of the Body
- 1.4.3. Different Torsos

1.5. The Arms
- 1.5.1. Joints: Shoulder, Elbow and Wrist
- 1.5.2. Arm Muscle Behavior
- 1.5.3. Detail of the Skin

1.6. Hand Sculpting
- 1.6.1. Hand Bones
- 1.6.2. Hand Muscles and Tendons
- 1.6.3. Hand Skin and Wrinkles

1.7. Leg Sculpting
- 1.7.1. Joints: Hip, Knee and Ankle
- 1.7.2. Muscles of the Leg
- 1.7.3. Detail of the Skin

1.8. Los pies
- 1.8.1. Bone Construction for the Foot
- 1.8.2. Foot Muscles and Tendons
- 1.8.3. Foot Skin and Wrinkles

1.9. Whole Human Figure Composition
- 1.9.1. Complete Creation of a Human Base
- 1.9.2. Joint and Muscle Attachment
- 1.9.3. Skin Composition, Pores and Wrinkles

1.10. Complete Human Model
- 1.10.1. Model Polishing
- 1.10.2. Hyper Skin Detail
- 1.10.3. Composition

Module 2. Retopology and Maya Modeling

2.1. Advanced Facial Retopology
- 2.1.1. Importing into Maya and the Use of Quad Draw
- 2.1.2. Retopology of the Human Face
- 2.1.3. Loops

2.2. Human Body Retopology
- 2.2.1. Creation of Loops in the Joints
- 2.2.2. Ngons and Tris and When to Use Them
- 2.2.3. Topology Refinement

2.3. Retopology of Hands and Feet
- 2.3.1. Movement of Small Joints
- 2.3.2. Loops and Support Edges to Improve the Base Mesh of Feet and Hands
- 2.3.3. Difference of Loops for Different Hands and Feet

2.4. Differences Between Maya Modeling vs. ZBrush Sculpting
- 2.4.1. Different Workflows for Modeling
- 2.4.2. Low Poly Base Model
- 2.4.3. High Poly Model

2.5. Creation of a Human Model from Scratch in Maya
- 2.5.1. Human Model Starting From the Hip
- 2.5.2. General Base Form
- 2.5.3. Hands and Feet and their Topology

2.6. Transformation of Low poly Model to High Poly
- 2.6.1. ZBrush
- 2.6.2. High poly: Differences Between Divide and Dynamesh
- 2.6.3. Sculpting Form: Alternation Between Low Poly and High Poly

2.7. Detail Application in ZBrush: Pores, Capillaries, etc.
- 2.7.1. Alphas and Different Brushes
- 2.7.2. Detail: Dam-Standard Brush
- 2.7.3. Projections and Surfaces in ZBrush

2.8. Advanced Eye Creation in Maya
- 2.8.1. Creation of the Spheres: Sclera, Cornea and Iris
- 2.8.2. Lattice Tool
- 2.8.3. Displacement Map from ZBrush

2.9. Use of Deformers in Maya
- 2.9.1. Maya Deformers
- 2.9.2. Topology Movement: Polish
- 2.9.3. Polishing of the Final Mesh

2.10. Creation of Final UVs and Application of Displacement Mapping
- 2.10.1. Character UVs and Importance of Sizes
- 2.10.2. Texturing
- 2.10.3. Displacement Map

Module 3. UVs and Texturing with Allegorithmic Substance Painter and Mari

3.1. Creation of High-Level UVs in Maya
- 3.1.1. Facial UVs
- 3.1.2. Creation and Layout
- 3.1.3. Advanced UVs

3.2. Preparation of UVs for UDIM Systems Focused on Large Production Models
- 3.2.1. UDIMs
- 3.2.2. UDIMs in Maya
- 3.2.3. Textures in 4K

3.3. XYZ Textures: What They Are and How to Use Them
- 3.3.1. XYZ. Hyperrealism
- 3.3.2. Multichannel Maps
- 3.3.3. *Texture Maps*

3.4. Texturing: Videogames and Cinema
- 3.4.1. *Substance Painter*
- 3.4.2. Mari
- 3.4.3. Types of Texturing

3.5. Texturing in *Substance Painter* for Videogames
- 3.5.1. Baking from High to *Low Poly*
- 3.5.2. PBR Textures and Their Importance
- 3.5.3. ZBrush with *Substance Painter*

3.6. Finalizing our *Substance Painter* Textures
- 3.6.1. *Scattering, Translucency*
- 3.6.2. Model Texturing
- 3.6.3. Scars, Freckles, Tattoos, Paints or Makeup

3.7. Hyper-Realistic Facial Texturing with XYZ Textures and Color Mapping
- 3.7.1. XYZ Textures in ZBrush
- 3.7.2. *Wrap*
- 3.7.3. Correction of Errors

3.8. Hyper-Realistic Facial Texturing with XYZ Textures and Color Mapping
- 3.8.1. Mari's Interface
- 3.8.2. Texturing in Mari
- 3.8.3. Projection of Skin Textures

3.9. Advanced Detailing of *Displacements* Maps in ZBrush and Mari
- 3.9.1. Texture Painting
- 3.9.2. *Displacement* for Hyperrealism
- 3.9.3. Layer Creation

3.10. Shading and Texture Implementation in Maya
- 3.10.1. Skin Shaders in Arnold
- 3.10.2. Hyper-realistic Eye
- 3.10.3. Touch-ups and Tips

You will gain the knowledge to be able to deal with the supervision and technical management"

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.

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*

The case method has been the most widely used learning system among the world's leading Information Technology 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 the course, students 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

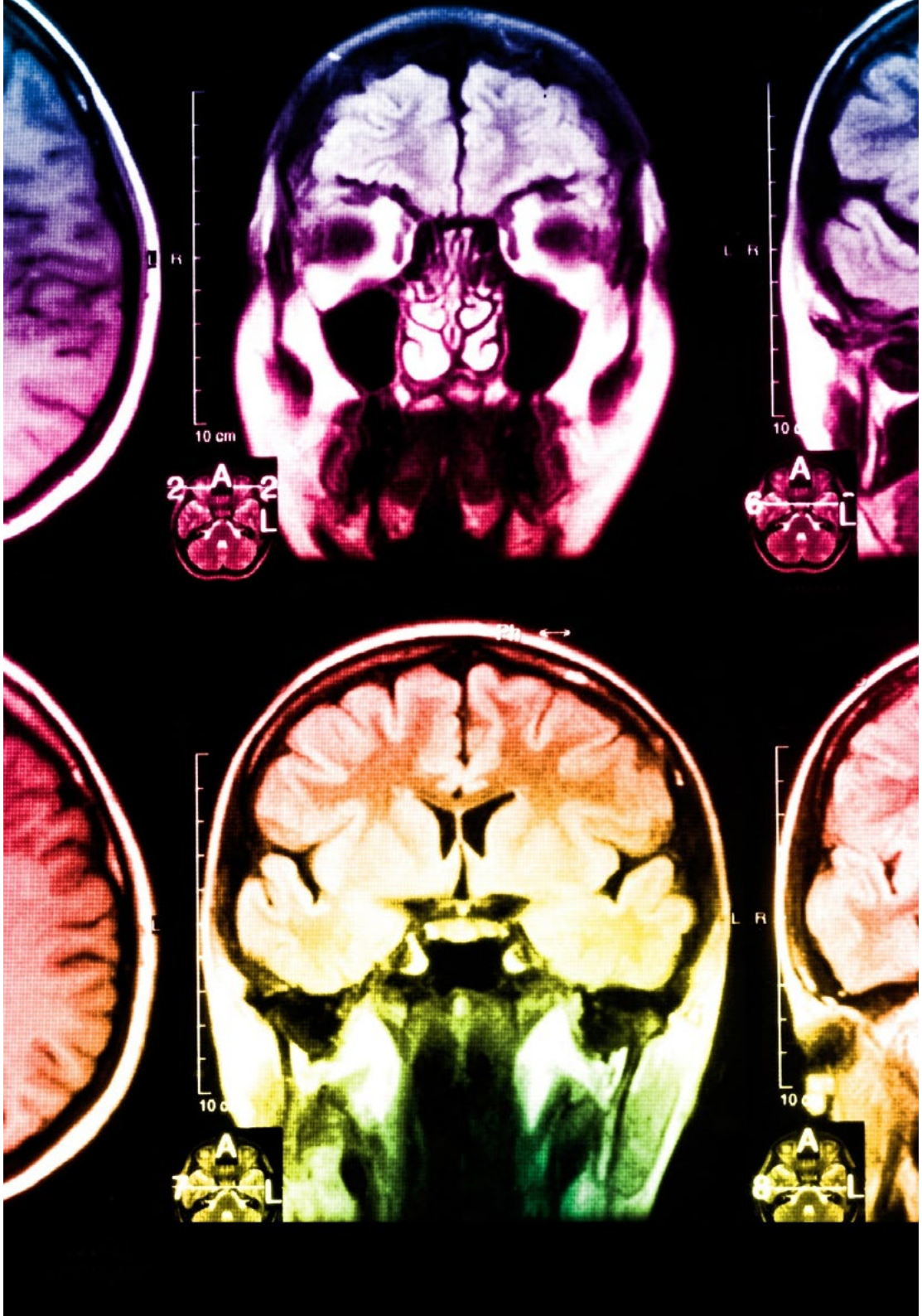
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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

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. 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 adapted in 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.

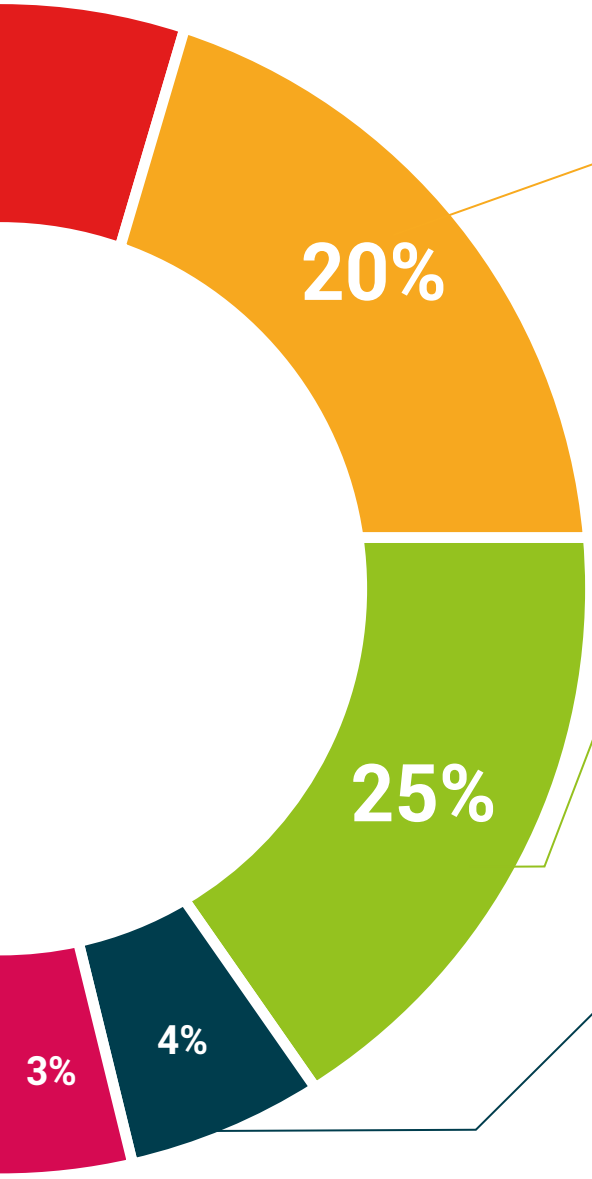
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

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 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 3D Human Modeling guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Global University.

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

This program will allow you to obtain your **Postgraduate Diploma in 3D Human Modeling** 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.

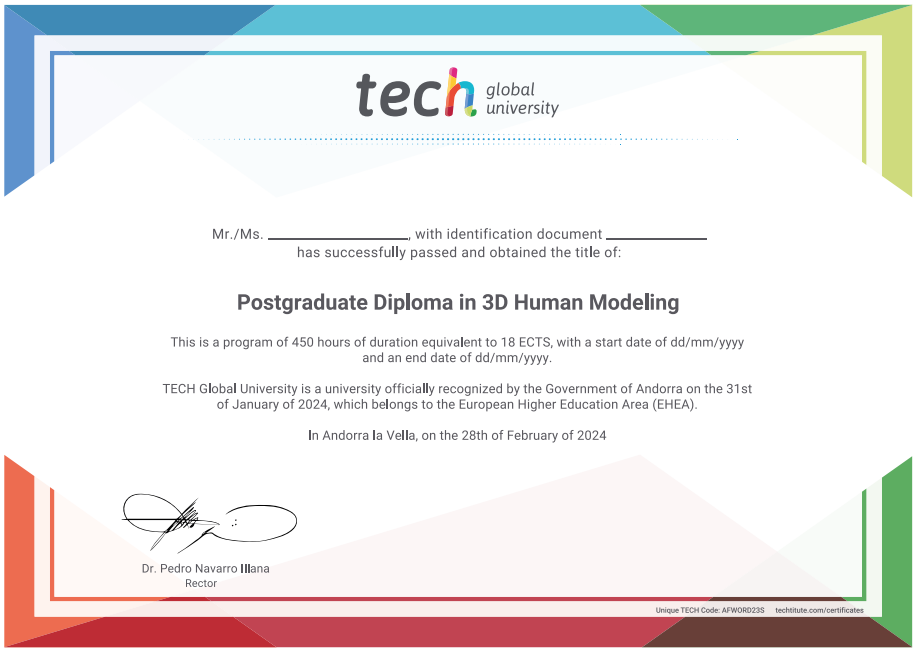
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in 3D Human Modeling**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**


tech global university

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Postgraduate Diploma in 3D Human Modeling

This is a program of 450 hours of duration equivalent to 18 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Rector

Unique TECH Code: AFWORD23S techtitute.com/certificates

*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

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