Postgraduate Diploma
3D Character Modeling

tech global university

Postgraduate Diploma
3D Character 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/design/postgraduate-diploma/postgraduate-diploma-3d-character-modeling**

Index

01
Introduction

The most memorable characters in movies or video games are, more often than not, carefully crafted 3D creations in which designers have had to invest a lot of time and effort. In this way, Lara Croft or Link remain in the collective memory of the public thanks to the personality and evolution they have undergone over the years, with increasingly realistic and plausible 3D models that perfectly capture the essence of the character. As it is not a trivial task to create a model full of details, TECH has prepared this complete program with which 3D designers will have all the necessary skills to create such legendary characters as Buzz Lightyear.

tech
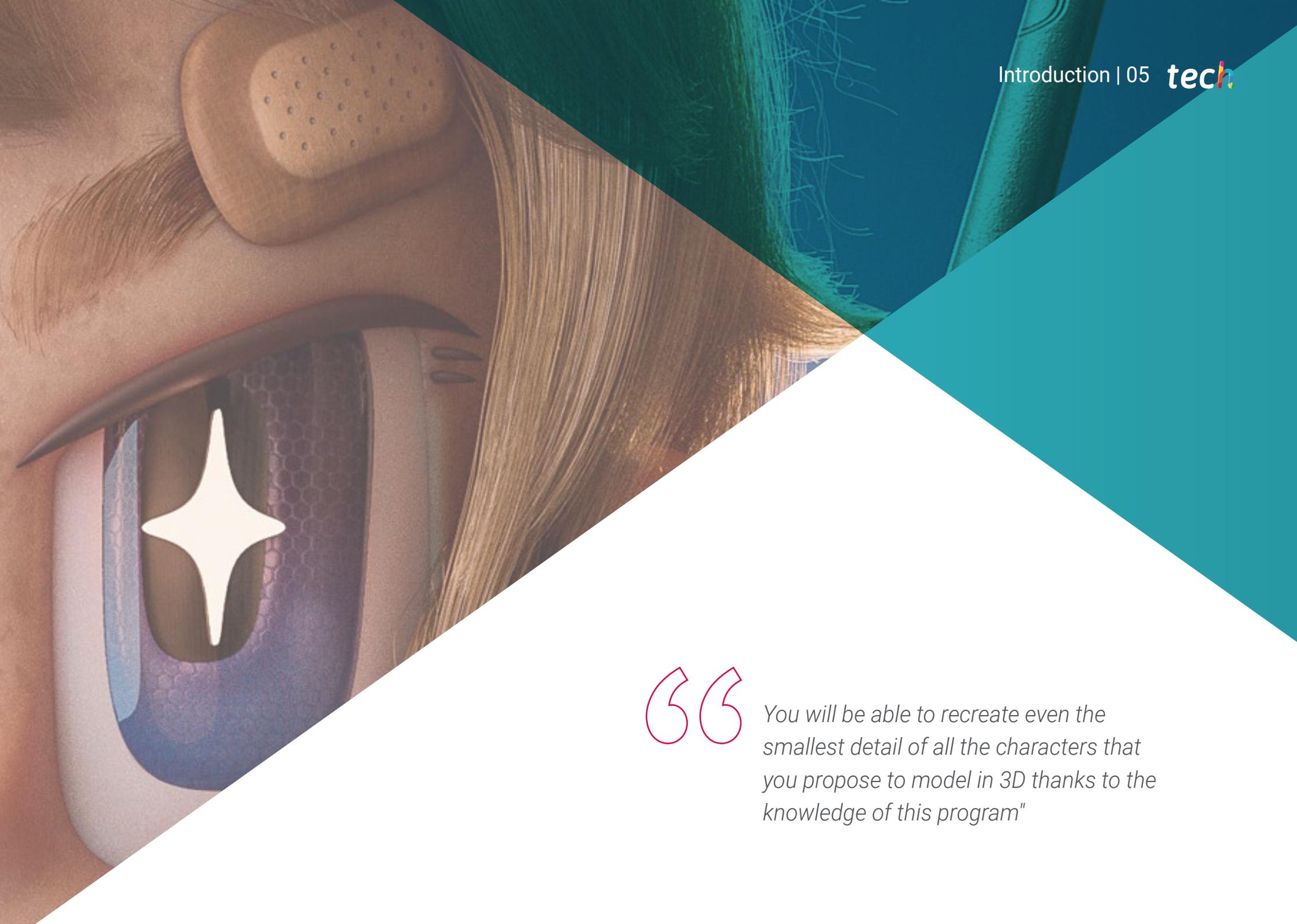
" You will be able to recreate even the smallest detail of all the characters that you propose to model in 3D thanks to the knowledge of this program"

The importance of creating a good 3D model when it comes to iconic characters lies in the designers' ability to accurately define all the textures, poses, clothing and features that the hero or villain will have. Therefore, even from the model itself, the personality and spirit of the character can be infused.

This requires that 3D design professionals have a good command of the most common tools in the industry: ZBrush, Maya and Marvelous Designer. Thanks to an expert combination of these programs, the designers will be able to distinguish themselves in their field and quickly become a reference in the industry when it comes to creating 3D characters.

This is why this TECH qualification focuses especially on the most intrinsic characteristics of design software, so that the student can get the most out of them in their professional performance. Additionally, the theory is complemented with supplementary subjects in modeling clothing, accessories, rigging and color, so that the student creates the best possible characters with an innovative and creative vision.

The Postgraduate Diploma in 3D Character Modeling is also a completely online qualification. This means that the student can download all the teaching material from day one, and can even choose the order in which to cover the entire syllabus. At TECH, it is the program that adapts to the work rhythms and responsibilities of the students.

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

- The development of case studies presented by experts in 3D 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 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

If you've always wanted to know how the most mythical characters in movies and video games are created, this is the qualification that will put you at the controls of that important task"

From the hands, jaws and mouth, to the outfits or accessories they'll wear, there won't be an aspect of character creation that you won't learn in this comprehensive qualification.

"
You will obtain your title of Postgraduate Diploma in 3D Character Modeling without the need to do a final project, with a more manageable course load and adapted to your needs"

Enroll today in this Postgraduate Diploma and start mastering the main design tools that will distinguish you as a creative and efficient artist.

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

02
Objectives

The objective of this qualification is to educate students in the important task of modeling the main characters of the most epic and emotional stories. This requires the student to be a master when using programs such as ZBrush or Maya, so the teaching delves into the more technical and expert aspects of 3D creation, including work methodologies with which the graduate will also be more efficient when it comes to meeting deadlines.

TECH will provide you with all the support you need so that your professional goal in the world of design will be closer upon graduation from this program"

General Objectives

- Expand knowledge of human and animal anatomy in order to develop hyper-realistic creatures
- Master 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 will learn to design 3D characters with an exquisite level of detail, which will enhance your professional reputation and your value as a prestigious designer"

Specific Objectives

Module 1. Stylized Characters

♦ Focus anatomical knowledge in simpler, cartoon-like forms

♦ Create a cartoon model from the base to the detail by applying what has been previously learned

♦ Review the techniques learned in the program in a different modeling style

Module 2. Rendering, Lighting and Posing of Models

♦ Discover advanced lighting and photography concepts to sell models more efficiently

♦ Develop the learning of model posing by means of different techniques.

♦ Delve into the development of a rig in Maya for the subsequent possible animation of the model

♦ Observe the control and use of the rendering of the model, bringing out all its details

Module 3. Clothing Simulation

♦ Study the use of Marvelous Designer

♦ Create fabric simulations in Marvelous Designer

♦ Practice different types of complex patterns in Marvelous Designer

♦ Delve into the professional workflow from Marvelous to ZBrush

♦ Develop the texturing and shading of clothes and fabrics in Mari

03
Course Management

Students will find in this Postgraduate Diploma in 3D Character Modeling a teaching staff 100% involved in their professional success. The teachers of this program have a good experience creating characters of all kinds in three-dimensional environments, so they know how to correctly guide the student during all stages of the program and will be able to solve any doubts or problems that may arise.
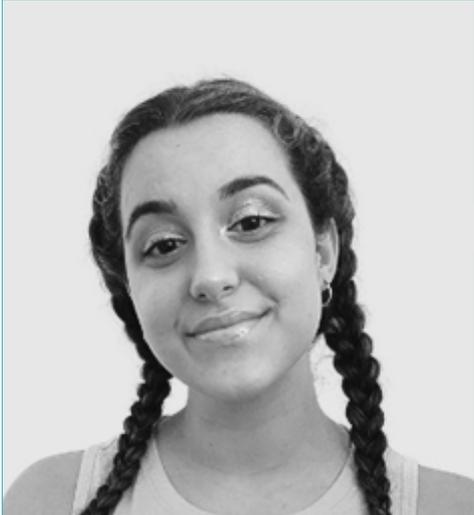
You will have the best possible guidance to become a master of creating top-notch 3D characters"

Management

Ms. Gómez Sanz, Carla

- 3D Generalist at Blue Pixel 3D
- Concept Artist, 3D Modeler, Shading in Timeless Games Inc.
- Collaboration with multinational consulting firm for the design of vignettes and animation for commercial proposals
- 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

Knowing the needs of students who decide to take this qualification, TECH has made sure that the theoretical content of the course is up to date with the current demands of the 3D design market. Therefore, the student is guaranteed access to high-level teaching material, full of practical examples and audiovisual content that not only lightens the teaching load, but also adds to the contextual understanding of the subject matter.

"
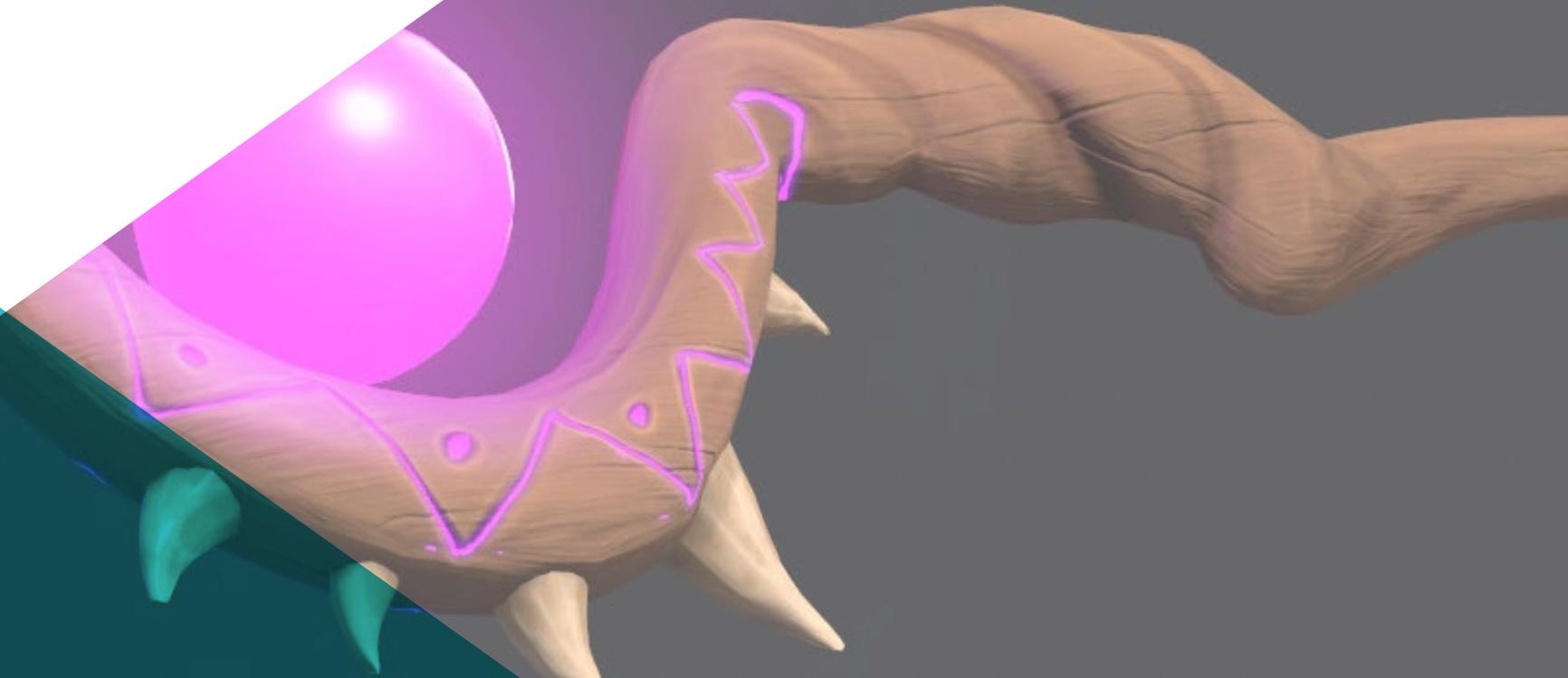
This qualification will be the key that will open the door to the best design studios, proving that you can take charge of the modeling of their most beloved characters"

Module 1. Stylized Characters

1.1. Choice of a Stylized Character and Blocking of Base Forms
  1.1.1. References and Concept Arts
  1.1.2. Base Forms
  1.1.3. Deformities and Fantastic Shapes
1.2. Conversion of our Low Poly into High Poly Model: Head, Hair and Face Sculpting
  1.2.1. Head Blocking
  1.2.2. New Hair Creation Techniques
  1.2.3. Improvements
1.3. Model Refinement: Hands and Feet
  1.3.1. Advanced Sculpting
  1.3.2. Refinement of General Shapes
  1.3.3. Shape Cleaning and Smoothing
1.4. Creation of Jaw and Teeth
  1.4.1. Creation of Human Teeth
  1.4.2. Increase its Polygons
  1.4.3. Fine Detailing of Teeth in ZBrush
1.5. Modeling Clothing and Accessories
  1.5.1. Types of Cartoon Clothing
  1.5.2. Zmodeler
  1.5.3. Applied Maya Modeling
1.6. Retopology and Clean Topology Creation from Scratch
  1.6.1. Retopology
  1.6.2. Loops According to the Model
  1.6.3. Optimization of the Mesh
1.7. UV Mapping and Baking
  1.7.1. UVS
  1.7.2. Substance Painter: Baking
  1.7.3. Polishing Baking
1.8. Texturing and Painting In Substance Painter
  1.8.1. Substance Painter: Texturing
  1.8.2. Hand Painted Cartoon Techniques
  1.8.3. Fill Layers with Generators and Masks
1.9. Lighting and Rendering
  1.9.1. Lighting of Our Character
  1.9.2. Color Theory and Presentation
  1.9.3. Substance Painter: Render
1.10. Posing and Final Presentation
  1.10.1. Diorama
  1.10.2. Posing Techniques
  1.10.3. Presentation of Models

Module 2. Rendering, Lighting and Posing of Models

2.1. Characters Posing in ZBrush
  2.1.1. Rig in ZBrush with ZSpheres
  2.1.2. Transpose Master
  2.1.3. Professional Finish
2.2. Rigging and Weighting of our Own Skeleton in Maya
  2.2.1. Rig in Maya
  2.2.2. Rigging Tools with Advanced Skeleton
  2.2.3. Rig Weighting
2.3. Blend Shapes to Give Life to Your Character's Face
  2.3.1. Facial Expressions
  2.3.2. Blend Shapes of Maya
  2.3.3. Animation with Maya
2.4. Mixamo, a Quick Way to Present Our Model
  2.4.1. Mixamo
  2.4.2. Mixamo Rigs
  2.4.3. Animations
2.5. Lighting Concepts
  2.5.1. Lighting Techniques
  2.5.2. Light and Color
  2.5.3. Shade

2.6.   Arnold Render Lights and Parameters
    2.6.1.   Lights with Arnold and Maya
    2.6.2.   Lighting Control and Parameters
    2.6.3.   Arnold Parameters and Configuration

2.7.   Lighting of our Models in Maya with Arnold Render
    2.7.1.   Lighting Set Up
    2.7.2.   Model Lighting
    2.7.3.   Mixing Light and Color

2.8.   Going Deeper in Arnold: Denoising and the Different AOV's
    2.8.1.   AOV´s
    2.8.2.   Advanced Noise Treatment
    2.8.3.   Denoiser

2.9.   Real-Time Rendering in Marmoset Toolbag
    2.9.1.   Real-Time vs. Ray Tracing
    2.9.2.   Advanced Marmoset Toolbag
    2.9.3.   Professional Presentation

2.10.   Post-Production Rendering in Photoshop
    2.10.1.   Image Processing
    2.10.2.   Photoshop: Levels and Contrasts
    2.10.3.   Layers: Characteristics and their Effects

Module 3. Clothing Simulation

3.1.   Importing your Model to Marvelous Designer and Program Interface
    3.1.1.   Marvelous Designer
    3.1.2.   Software Functionality
    3.1.3.   Real-Time Simulations

3.2.   Creation of Simple Patterns and Clothing Accessories
    3.2.1.   Creations: T-shirts, Accessories, Hats and Pockets
    3.2.2.   Fabric
    3.2.3.   Patterns, Zippers and Seams

3.3.   Advanced Clothing Creation: Complex Patterns
    3.3.1.   Pattern Complexity
    3.3.2.   Physical Qualities of Fabrics
    3.3.3.   Complex Accessories

3.4.   Clothing Simulation at Marvelous
    3.4.1.   Animated Models at Marvelous
    3.4.2.   Fabric Optimization
    3.4.3.   Model Preparation

3.5.   Export of Clothing from Marvelous Designer to ZBrush
    3.5.1.   Low Poly in Maya
    3.5.2.   UVs in Maya
    3.5.3.   ZBrush, Use of Reconstruct Subdiv

3.6.   Refinement of Clothing
    3.6.1.   Workflow
    3.6.2.   Details in ZBrush
    3.6.3.   Clothing Brushes in ZBrush

3.7.   Improve the Simulation with ZBrush
    3.7.1.   From Tris to Quads
    3.7.2.   UV's Maintenance
    3.7.3.   Final Carving

3.8.   High-Detail Clothing Texturing in Mari
    3.8.1.   Tileable Textures and Fabric Materials
    3.8.2.   Baking
    3.8.3.   Texturing in Mari

3.9.   Maya Fabric Shading
    3.9.1.   Shading
    3.9.2.   Textures Created in Mari
    3.9.3.   Realism with Arnold Shaders

3.10.   Render
    3.10.1.   Clothing Rendering
    3.10.2.   Illumination in Clothing
    3.10.3.   Texture Intensity

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

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

Case Study to contextualize all content

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

"

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

You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.

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

A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch, which presents the most demanding challenges and decisions in this field, both nationally and internationally. This methodology promotes personal and professional growth, representing a significant step towards success. The case method, a technique that lays the foundation for this content, ensures that the most current economic, social and professional reality is taken into account.

❝

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

The case method 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.

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. 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:
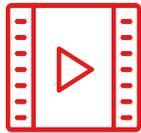
Study Material

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.

30%

10%

8%

20%

25%

4%

3%
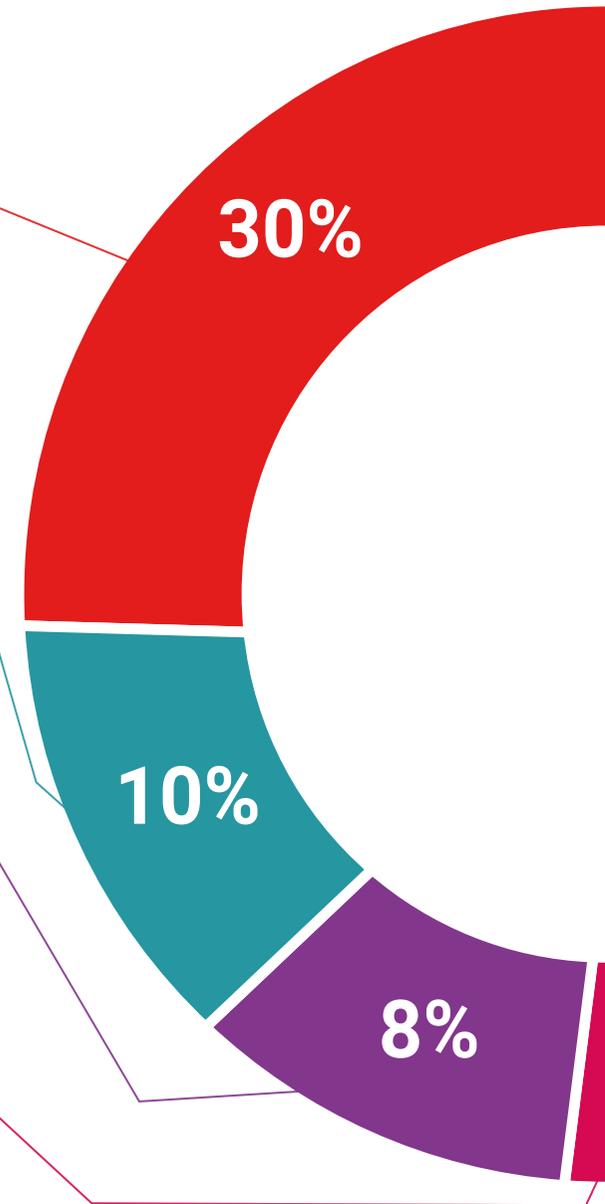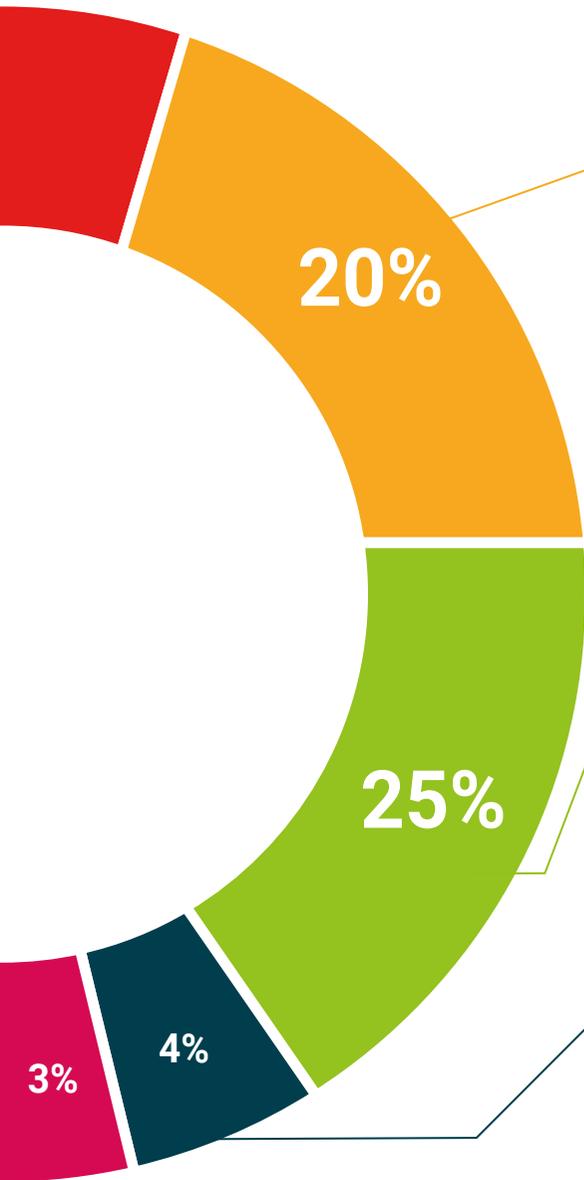
Case Studies

Students will complete a selection of the best case studies chosen specifically for this program. Cases that are presented, analyzed, and supervised by the best specialists in the world.

Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".

Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.

Certificate

The Postgraduate Diploma in 3D Character 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 paperwork"*

This program will allow you to obtain your **Postgraduate Diploma in 3D Character 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.
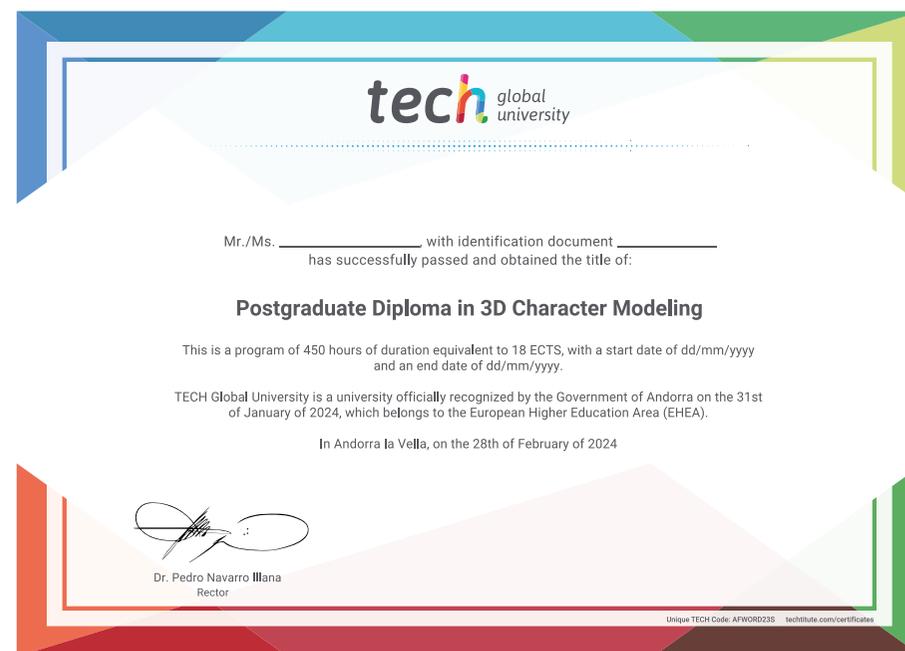
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in 3D Character 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 Character 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.

tech global university

Postgraduate Diploma
3D Character Modeling

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

Postgraduate Diploma

3D Character Modeling

tech global university