

# Postgraduate Diploma 3D Character Modeling





## Postgraduate Diploma 3D Character Modeling

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

Website: [www.techtute.com/us/information-technology/postgraduate-diploma/postgraduate-diploma-3d-character-modeling](http://www.techtute.com/us/information-technology/postgraduate-diploma/postgraduate-diploma-3d-character-modeling)

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# 01

# Introduction

Whether watching an animated short film, a movie or playing a video game, 3D Character Modeling is an area of computer science and design that is constantly interacted with. In general, it is an indispensable part of the entertainment industry, as today more and more brands and users are turning to the incorporation of professional character modeling to achieve their commercial and personal goals. This online program covers the latest techniques and programs in the world of 3D modeling for the graduate to create perfect meaningful characters for the film industry as well as for any video game.





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*If one of your dreams is to create a character for film or video games, this program is made for you"*

As an audiovisual technique, the branch of computer design is capable of developing virtual characters to exist in a 3D space. It is a complex process of transforming a concept such as a character or a thing, essentially an idea, into a 3D model. This program presents styling techniques, an art that not everyone masters. For this, it will be necessary to lay the foundations of realism, so that the students will be able to transform what they have learned into a character as realistic as possible or a cartoon, which they will be able to use later on.

To understand the characteristics of clothing, its seams, folds, zippers, and how all these elements are affected by movement, Marvelous Designer will be used, a software perfect for the creation of fabrics for both Real-Time and film. With this program the student will design perfect patterns and textures with which to dress the previously created character.

Furthermore, the rendering will be further developed to achieve an optical effect that allows a realistic vision, with depth and texture. To do this, it is important to play with lighting, which is an important element when it comes to recreating the model you have in mind. This program will enable the graduate to refine the composition of color, light, shapes, and elements that will enhance his or her work.

In addition, the Postgraduate Diploma in 3D Character Modeling is a 100% online program. This means that the graduate can download all the teaching material from the first day, 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 practical cases presented by experts in 3D Character 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



*You will be adept at mastering both simple and complex patterns to recreate any fabric"*

“

*A good presentation speaks a lot about you as an artist, so you will refine the composition of color and light, as well as the forms and elements that enhance your work”*

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

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

The design of this program focuses on problem-based learning, through which the professional must try to solve the different professional practice situations that arise during the academic year. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

*You will learn how to use Marvelous Designer, the perfect software for the creation of fabrics for both Real-Time and film.*

*You will be able to create from the most realistic character to the most charismatic cartoon character.*



# 02

## Objectives

Focus on anatomical knowledge in simpler and cartoon shapes, delve into the development of a Rig in Maya for the subsequent possible animation of the model, observe the render control of the model, bringing out all its details, as well as delve into the Workflow of professional work from Marvelous to Zbrush, are some of the objectives presented by this Postgraduate Diploma, which aims to create an optimal and dynamic workflow with which to work more efficiently 3D modeling.







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*You will design 3D characters with an optimal level of detail, which will enhance your value as a prestigious computer scientist and your reputation”*



## General Objectives

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- ◆ 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

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*You will be able to become a 3D Artist scientist in film, advertising and video game companies, as well as a great digital sculptor who can freelance"*





## Specific Objectives

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### 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 course 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 *Workflow* of professional work from *Marvelous* to *ZBrush*
- ◆ Develop the texturing and *shading* of clothes and fabrics in *Mari*

03

# Course Management

In its maxim of offering an elite education for all, TECH has selected teachers who have extensive experience in different types of design work both for the video game industry as well as for animation and character 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.





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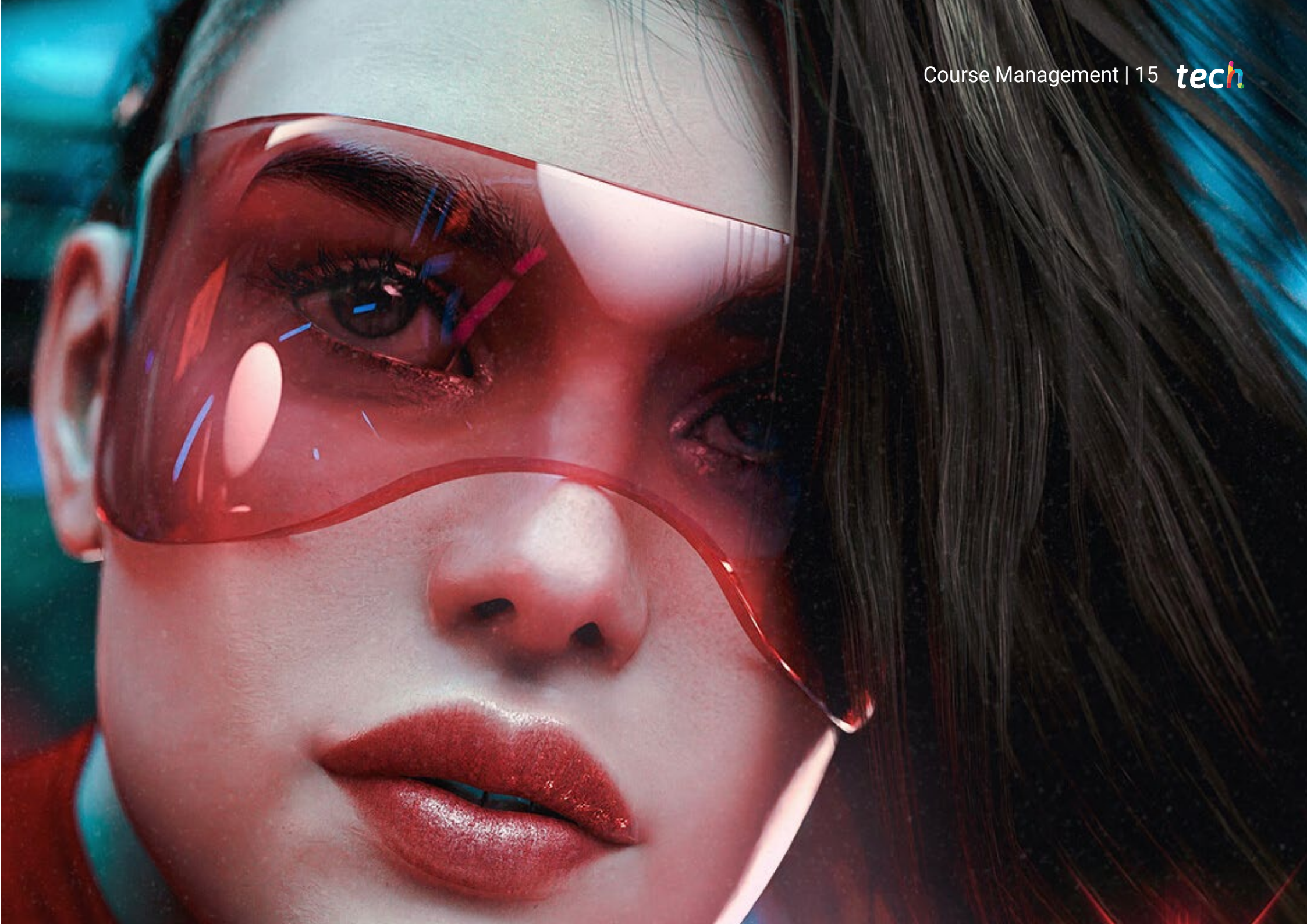
*The best experts in the industry will guide you to become a master of 3D character creation at the highest level"*

## 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



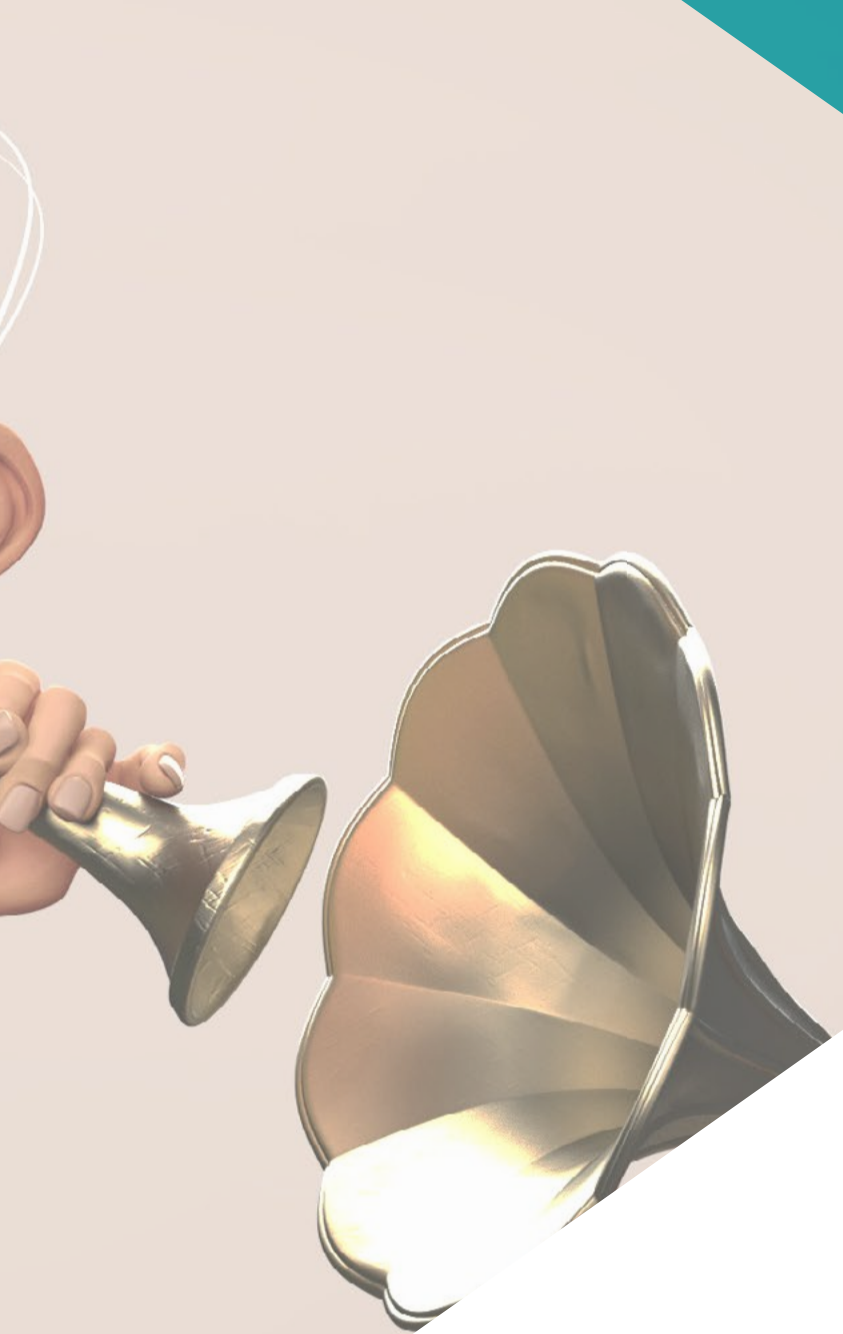
# 04

## Structure and Content

Industry professionals have brought together in three very practical modules, stylized characters and clothing simulation, as well as rendering, lighting and model posing. This Postgraduate Diploma covers everything from sculpting the head, hair and face of the Low Poly model into High Poly to exporting clothes from Marvelous Designer to Zbrush. All this bringing together the techniques of lighting, color and shadows applied to 3D modeling.







“

*A practical syllabus with which you will recreate every detail of every character you set out to model in 3D"*

## 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 to 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. UV's
  - 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. Handpainted 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. AOVs
  - 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
- 3.5. Export of Clothing from Marvelous Designer to ZBrush
  - 3.5.1. Low Poly in Maya
  - 3.5.2. UV's 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

### 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



*You will master the main design tools that will distinguish you as a creative and efficient 3D specialist"*

# 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 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 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.

This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

*Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.*

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.



This program offers the best educational material, prepared with professionals in mind:



### Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



### Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

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



### Practising Skills and Abilities

They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization 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 Character Modeling guarantees students, in addition to the most rigorous and up-to-date education, access to a certificate 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 private qualification will allow you to obtain a **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.

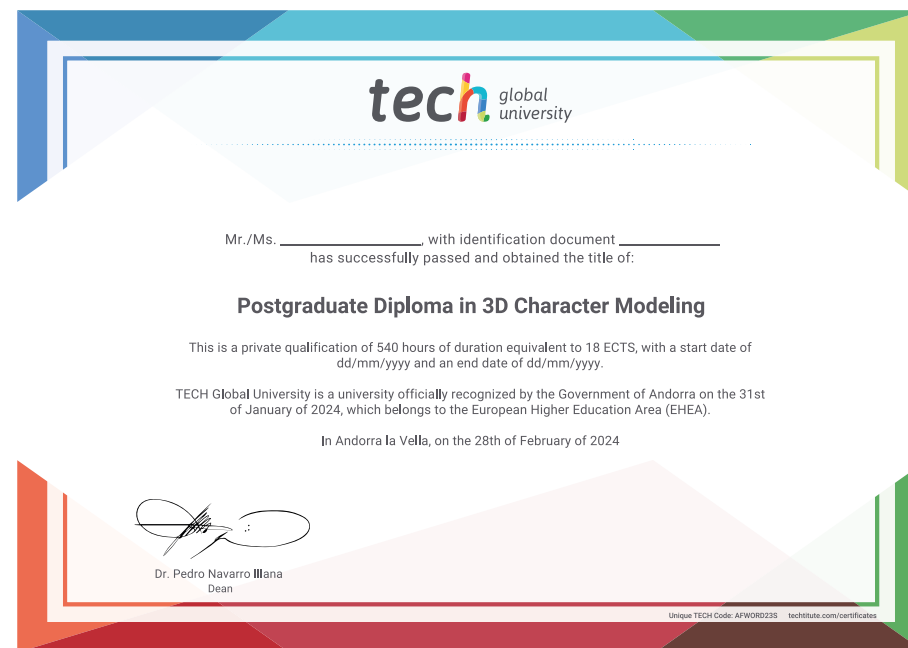
This **TECH Global University** private qualification, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

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

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**



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



## Postgraduate Diploma 3D Character Modeling

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

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