

# Professional Master's Degree

## 3D Texture Modeling





## Professional Master's Degree 3D Texture Modeling

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Global University
- » Credits: 60 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtitute.com/us/information-technology/professional-master-degree/master-3d-texture-modeling](http://www.techtitute.com/us/information-technology/professional-master-degree/master-3d-texture-modeling)

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# 01

# Introduction

The texturing process is one of the fundamental steps when producing in 3D because it is what dresses the final model, that is, what gives it a sense of realistic and textured finish, and what takes a flatter dimension to the figure that has been made. The labor market in this field is continually adapting to the demands of an audience that is increasingly focused on rich and complex on-screen entertainment. Therefore, this degree, taught entirely in online format, aims to respond to this demand by providing students with the best computer and technological skills to achieve the best texturing processes.





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*Acquire the best computer and technological skills to achieve the best texturing processes through this online degree"*

A brief tour through the History of Art would show the importance of texturing and its evolution in any artistic production. Bringing light, texture and a sense of superior realism is the achievement that any artist, designer or programmer of animation or video games would like to achieve for their projects. This process has acquired increasingly complex dimensions in the technological field, always in the search for a simpler process but with better and more professional results.

This Professional Master's Degree in 3D Texture Modeling has been designed so that the designer can specialize in the texturing process and in the most complete tools and *software* to master this technique, such as Zbrush, Substance Painter or Unreal Engine. The content starts, in fact, focused on the use of 3DS Max, one of the most widely used programs in the design, animation and audiovisual production industry.

Next, the educational plan goes through the texturing blocks, dedicated to explaining the types of textures and materials that are currently being used. The training delves into the process of preparing the model, from the creation of coordinates to the mapping and rendering of the model at the end, allowing to show the work with different sets of lights and a great image quality. For this purpose, the *Marmoset Toolbag* tool will be explored.

The student will have a module dedicated to exporting in *Unreal Engine*, a development engine that allows to build an animation or simulation. Here, you will learn how to handle yourself with ease within the program, with special emphasis on *lightmaps*, the light maps that greatly influence the quality of the final work and the creation of frames.

This Professional Master's Degree is taught entirely online, in order to favor the autonomous and involved learning of the students. Thanks to the monitoring and explanations of an excellent teaching staff, made up of professionals of the highest level, you will have the pedagogical resources and multimedia material always available on the virtual platform.

This **Professional Master's Degree in 3D Texture Modeling** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ◆ The development of case studies presented by experts in 3D Texture Modeling
- ◆ The graphic, schematic, and eminently 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



*Without leaving aside your personal or professional projects, specialize in three-dimensional modeling and texturing thanks to this fully online Professional Master's Degree"*

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*With the support of the teaching staff, a group of true professionals in the industry, you will achieve your goal of specializing in 3D texture modeling”*

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 during the academic year. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

*Learn, totally online, the best texturing tools and software, as well as their application in three-dimensional modeling.*

*Take advantage of this opportunity to continue expanding your knowledge in 3D texture modeling in a comfortable, easy and practical way.*





# 02 Objectives

The purpose of this degree is to provide the student with the most complete content for the management of the industry's pioneering programs, as demanded by the labor market for audiovisual production, design and animation. Given the importance of textures in any of these areas, an educational plan has been devised in accordance with these objectives: to move from flat, lifeless figures to works of art with a great deal of detail. Thus, upon graduation, the student will be a highly qualified expert to participate in projects of great international importance, or to work on their own account.







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*Take this Professional Master's Degree and respond, with a specialized profile, to the demands of a growing technological sector"*



## General Objectives

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- ◆ Know in depth all the steps to create a professional 3D Modeling
- ◆ Know and understand in detail how textures work and how they influence modeling
- ◆ Master several programs focused on modeling, texturing and real time used today in the professional world
- ◆ Apply the knowledge acquired in the resolution of modeling problems
- ◆ Know how to organize and control the time spent on a complete 3D modeling, learning to value their work in the face of possible jobs
- ◆ Know the latest updates in the world of modeling and video games, learning about the most updated and used tools of each program
- ◆ Expertly use the knowledge acquired to create your own projects and intelligently add to your portfolio
- ◆ Develop the resources of each program to achieve the best effect for your modeling
- ◆ Be professionally trained to organize adequate working time for a job
- ◆ Solve complex problems and make responsible decisions



## Specific Objectives

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### Module 1. 3d Modeling with 3ds Max

- ◆ In-depth knowledge of the functionality of the 3DS Max program
- ◆ Know in depth the program interface and its controls
- ◆ Transform the geometry to get the shape you want in the fastest and most efficient way
- ◆ Learn all the effects of the modifiers and learn how to combine them for greater effect
- ◆ Understand Boolean operations and know how to use them to our advantage
- ◆ Use 2D elements to combine them with our 3D to create shapes more efficiently

### Module 2. 3D Modeling with Advanced 3DS Max

- ◆ Learn in depth two ways of editing and use them according to the type of modeling or according to the objective
- ◆ Know all types of program editing to create any type of modeling proposed by the user
- ◆ Customize the program to use it in the fastest and most efficient way for each professional
- ◆ Know and use the most advanced tools of the program
- ◆ Introduction to Plugins and Scripts to use them for the benefit of the modeling process

### Module 3. 3D Modeling with Graphite Tool

- ◆ Know in detail the Graphite Tool, the most used by 3DS Max professionals
- ◆ Learn its interface and get to grips with it for a more professional result in less time
- ◆ Compare each tool with its counterpart in polygonal mode and learn about their benefits
- ◆ Know the tools you will use throughout the 3D modeling process and their optimization
- ◆ Find errors in 3D modeling and know how to solve them in the most intelligent way

#### **Module 4. 3D Modeling with ZBrush**

- ◆ Know in depth the Zbrush program, the most used in organic modeling in the market
- ◆ Optimize the model as you work on it, avoiding potential problems after refinement
- ◆ Understand each of the program's tools, knowing when to use each one and why
- ◆ Learn the Hard Surface tool, which allows you to perform inorganic modeling within the program.
- ◆ Know different methods to perform organic modeling
- ◆ Learn everything you need to start a character or creature from scratch and get through to the end without any problems

#### **Module 5. Texturing**

- ◆ Know and understand all texture maps and their application to modeling
- ◆ Know the types of materials existing today and how they work, being able to create one from scratch or modify an existing one
- ◆ Generate and understand mapping coordinates of a 3D model for further work in texturing
- ◆ Assign Object IDs to work more efficiently on textures
- ◆ Work models from high to low resolution and vice versa to further optimize the model, while retaining the same levels of detail
- ◆ Create textures for the 3D model with different programs

#### **Module 6. Texturing with Substance Painter**

- ◆ Know in depth the Substance Painter program, the most used for texturing in the world of videogames nowadays
- ◆ Understand the process of baking from a high-resolution model to a low-resolution model
- ◆ Know and understand the different layers of a material and how they affect it
- ◆ Create materials from scratch and modify existing materials to achieve a fully customized material
- ◆ Know how to work with mapping coordinates and masks to correctly apply textures to the model
- ◆ Learn about brushes, how to use them and how to create customized brushes
- ◆ Learn how to use the resources found in the program or externally to improve textures
- ◆ Know different methods to create or modify textures

#### **Module 7. Rendering**

- ◆ Know in depth the materials and rendering tools of the Marmoset Toolbag program, widely used by 3D modelers and sculptors
- ◆ Understand how to position lights to create a suitable environmental setting for the model
- ◆ Create and position cameras to achieve a perspective that makes 3D Modeling more interesting
- ◆ Exportar renderizados propios de un profesional
- ◆ Basic knowledge of a camera animation to create an animated render to achieve more effects
- ◆ Know the up-to-date tools of the programs
- ◆ Know how to perform a basic rendering with other programs, such as Iray, Zbrush, Photoshop and Keyshot

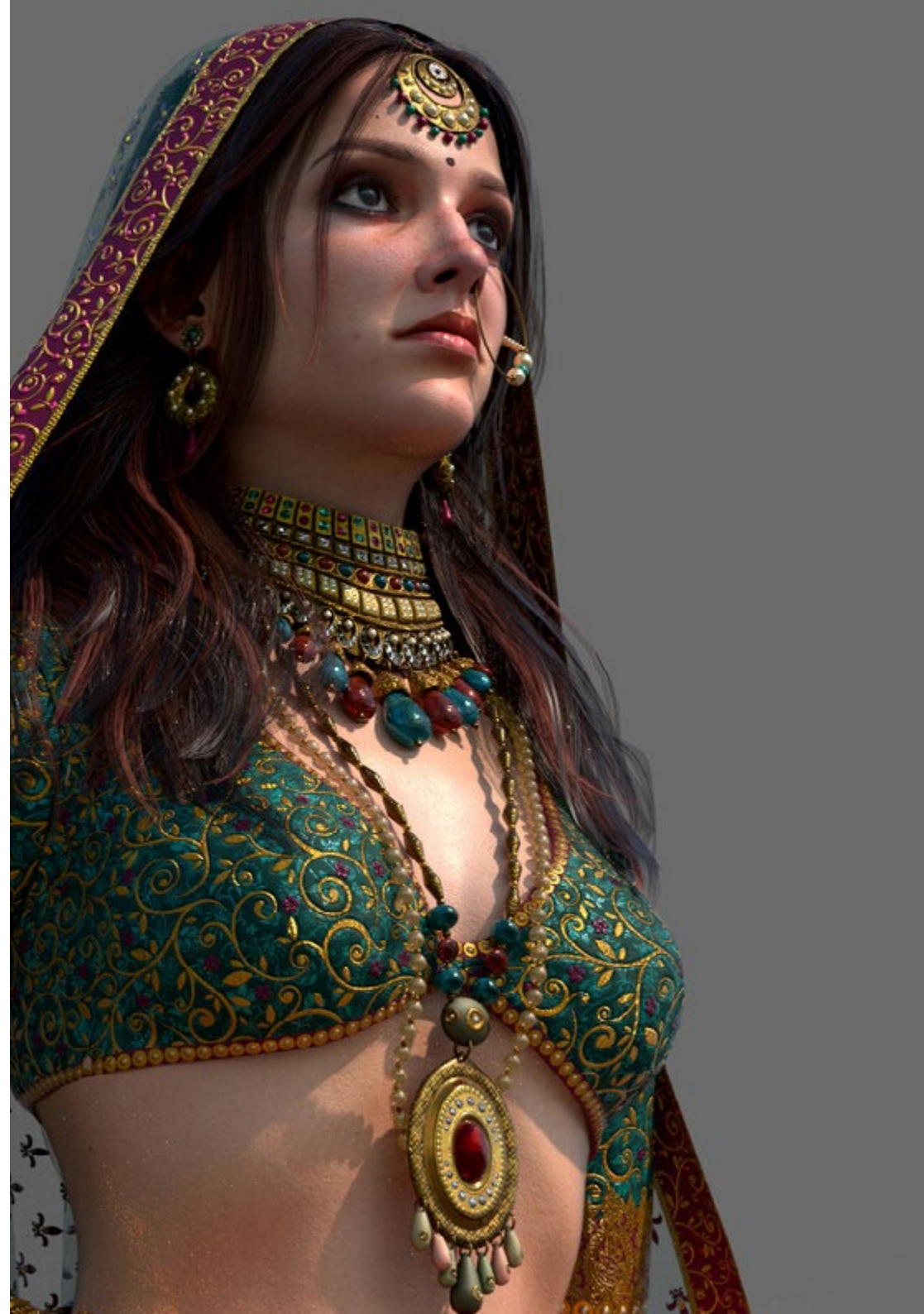


### Module 8. Rendering with V-Ray Engine in 3DS Max

- ◆ In-depth knowledge of the V-Ray engine assigned to the 3DS Max program
- ◆ Configure the rendering options to assign the desired rendering engine
- ◆ Learn about V-Ray's own materials and work with them through nodes
- ◆ Migrate textures created in Substance Painter to the V-Ray engine
- ◆ Configure the V-Ray scene illumination
- ◆ Give more details to the model without changing or adding geometry
- ◆ Intelligent positioning of the model and camera to create an interesting scene
- ◆ Static and animated renderings of the model

### Module 9. Characters

- ◆ Create a character or creature from scratch to rendering
- ◆ Learn tricks to work faster and more efficiently with Zbrush
- ◆ Have the knowledge to know when to use one method or another depending on the situation
- ◆ Have a practical guide for sculpting certain elements that may be more difficult to sculpt
- ◆ Troubleshooting during the entire course of a modeling run
- ◆ Know specific methods to create various types of materials in a modeling
- ◆ Generate hair in different styles and with different programs depending on the style, from styling/cartoon to hyperrealism
- ◆ Know how to pose the character, knowing the importance of dynamism and silhouette
- ◆ Add elements that add importance to the character, such as props, props and the environment





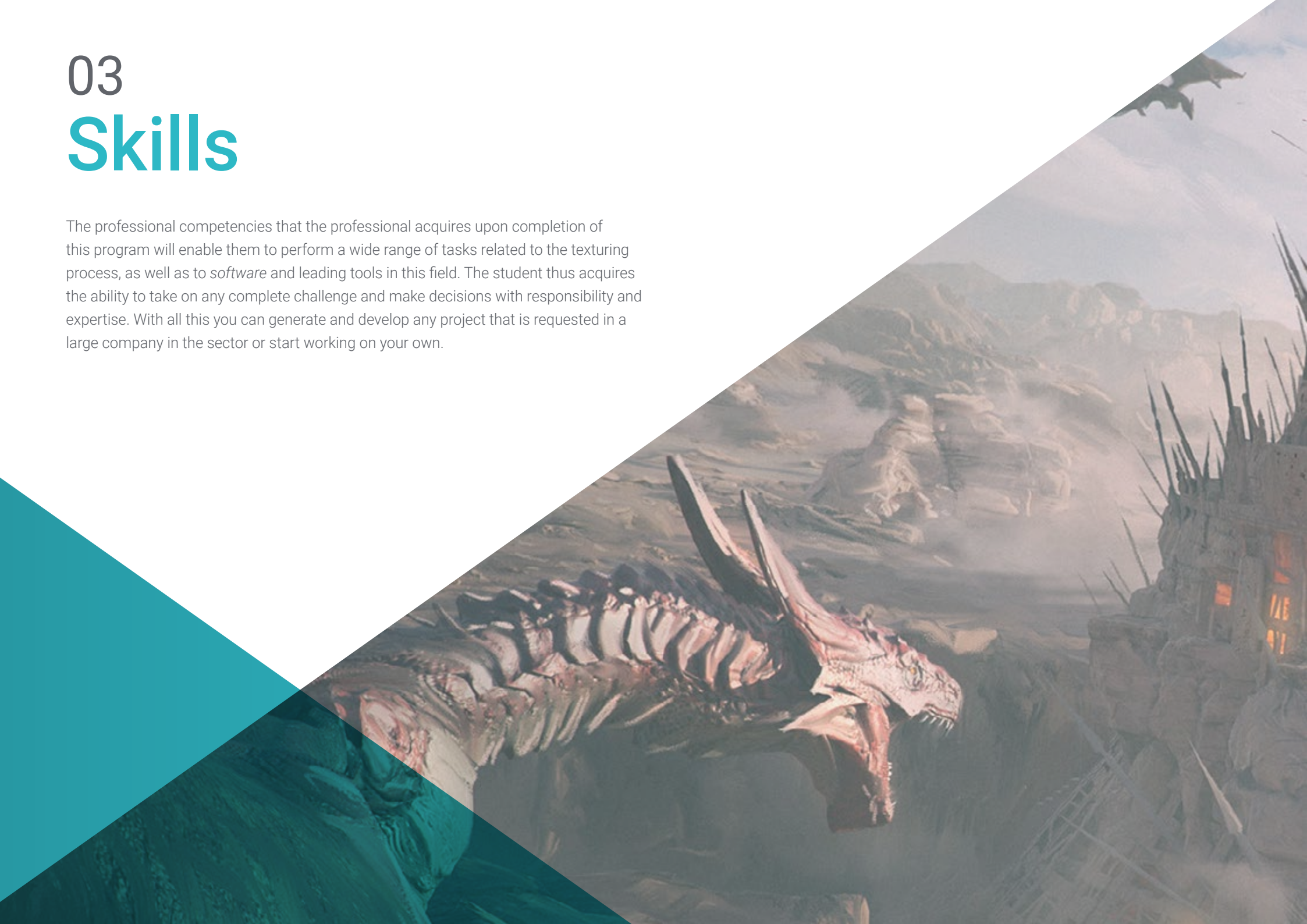


### Module 10. Export to Unreal

- ◆ Handle the Unreal Engine real time engine in a way that it performs perfectly when working with a 3D model and its textures
- ◆ Understand the properties of Unreal materials
- ◆ Know how to work with and understand Unreal, material nodes, giving effects to textures to achieve unique materials
- ◆ Correctly light an Unreal scene in a realistic way according to the desired ambience
- ◆ Configure Unreal Lightmaps, achieving better resolution and optimizing engine performance
- ◆ Perform basic post-processing for rendering with good visual effects

# 03 Skills

The professional competencies that the professional acquires upon completion of this program will enable them to perform a wide range of tasks related to the texturing process, as well as to *software* and leading tools in this field. The student thus acquires the ability to take on any complete challenge and make decisions with responsibility and expertise. With all this you can generate and develop any project that is requested in a large company in the sector or start working on your own.







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*Acquire the best skills in texturing process, as well as with the leading software and tools in this field"*



## General Skills

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- ◆ Master the necessary tools for the creation of textures from low quality figures and vice versa
- ◆ Apply the knowledge of lighting to improve the texture of the figure
- ◆ Proficiency in editing and rendering techniques
- ◆ Know how to communicate the ideas and development of the projects you work on

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*Master the texturing and rendering process to achieve the best finishes in your personal and professional projects"*







## Specific Skills

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- ◆ Be able to make realistic figures using 3DS Max programs, also using 2D elements to create more fluid shapes
- ◆ Seamless use of two or more forms of editing depending on the modeling objective
- ◆ Know the shortcuts and *plugins* to use the programs faster and more efficiently
- ◆ Perfectly handle the interface of programs such as Graphite Tool and identify possible errors in order to solve them intelligently
- ◆ Be able to perfectly use the ZBrush program to create textures and organic modeling from scratch
- ◆ In-depth knowledge of Substance Painter for the creation of materials from scratch, using brushes and layers to achieve neat textures
- ◆ Be able to properly configure lighting in ZBrush to generate hair in different styles and hyperrealism
- ◆ Master rendering to avoid models that look bad or do not meet required standards

# 04

# Course Management

Prestigious industry experts have designed this training to meet the demands and requirements of a growing industry. They have dedicated their professional life to develop their texturing technique, continuing at the forefront of the industry and developing their professional practice in the best animation studios and projects of international stature. Through the content they will present and the diverse didactic materials they have developed, students will acquire the theoretical, practical and professional knowledge necessary to face new challenges in their careers.







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*Face new challenges in your professional career thanks to this Professional Master's Degree, designed by real experts and professionals in the sector"*

## Management



### Ms. Sanches Lalaguna, Ana

- ◆ 3D Designer at Lalaguna Studio
- ◆ 3D Generalist at NeuroDigital Technologies
- ◆ 3D Generalist at NeuroDigital Technologies
- ◆ 3D Artist and Narrative Responsible in the videogame "A Rising Bond" (InBreak Studios)
- ◆ Master's Degree in Videogame Art and Design (U-tad)
- ◆ Diploma in 2D and 3D Animation Filmmaking (ESDIP)
- ◆ Winner of the Best Narrative award and nominated for Best Game and Best Art at the PlayStation Awards.

## Professors

### Mr. Foncubierta Martín, Óscar

- ◆ 3D Graphic Designer at Secret 6 Madrid
- ◆ 2D Artist at 8Bitamin Games
- ◆ Graduated in Video Game Design and Development in ESNE
- ◆ Double Master in Character Artist and Modeling and Texturing for AAA at Voxel School





# 05

## Structure and Content

This Professional Master's Degree has an updated study plan developed by a select teaching staff. Therefore, the student will acquire the necessary knowledge to improve their rendering technique, lighting and, of course, to create realistic and fluid textures. All this, through various teaching materials and teaching resources available on the virtual platform for the duration of the entire degree, which highlights high-definition videos and practical guides updated to the parameters of each design software. This educational plan is based on a *relearning* and *learning by doing* methodology, in order to promote the student's autonomous learning.







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*Based on a relearning and learning by doing methodology, this Professional Master's Degree aims to promote the student's autonomous learning"*



## Module 1. 3D Modeling with 3DS Max

- 1.1. 3D Modeling with 3DS Max
  - 1.1.1. Orbit, Scopes and Views
  - 1.1.2. Geometry Display Modes
  - 1.1.3. Steering Wheels
- 1.2. Transformations and Geometry
  - 1.2.1. Interactive and Parametric Transformations
  - 1.2.2. Standard and Extended Primitives
  - 1.2.3. Scaling Transformation
  - 1.2.4. Select and Place / Select and Rotate
  - 1.2.5. Alignment and Symmetry
- 1.3. Main Operations
  - 1.3.1. Duplicate, Interactive Selection and Selection Groups and Elements
  - 1.3.2. Layers, Grid, Snap y Pivot Point
  - 1.3.3. Links, Coordinate Systems, Actions, Views and Isolate Geometry
- 1.4. Parametric Modifiers
  - 1.4.1. Bend, Taper, Skew and Twist
  - 1.4.2. Stretch and Squeeze
  - 1.4.3. Ripple, Wave and Noise
  - 1.4.4. Spherify, Lattice and Mirror
  - 1.4.5. Push and Relax
  - 1.4.6. Slice, Shell and CapHoles
- 1.5. Free Deformation Modifiers
  - 1.5.1. FFD Modifiers
  - 1.5.2. FFD Cyl
  - 1.5.3. FFD Box
- 1.6. Composition Objects
  - 1.6.1. Boolean Operations Boolean and ProBoolean
  - 1.6.2. Object Dispersion Scatter
  - 1.6.3. Morphism Morph

- 1.7. 2D Shapes Splines
  - 1.7.1. Splines and Its Options
  - 1.7.2. The Vertex Line and Types
  - 1.7.3. Sub-Object Vertex, Segment and Splines
- 1.8. 2D Shapes Advanced Splines
  - 1.8.1. Editable Spline and Use of Grid and Snap to Create 2D Shapes
  - 1.8.2. Parametric Modifiers, FFD and Booleans with Splines
  - 1.8.3. Extended Splines and Section
- 1.9. Spline Modifiers
  - 1.9.1. Extrude
  - 1.9.2. Bevel
  - 1.9.3. Sweep
  - 1.9.4. Lathe
- 1.10. Composition Objects Splines
  - 1.10.1. Loft
  - 1.10.2. Terrain
  - 1.10.3. Sharpe Merge

## Module 2. 3D Modeling with Advanced 3DS Max

- 2.1. Mesh Editing Polygonal Edition
  - 2.1.1. Polygonal Edition EditablePoly and EditPoly
  - 2.1.2. Panels, Selection and Flexible Selection
  - 2.1.3. TurboSmooth Modifier, MeshSmooth and HSDS
- 2.2. Mesh Editing Geometry
  - 2.2.1. Vertex, Edge and Edge Editing
  - 2.2.2. Polygon, Element and Geometry Editing
  - 2.2.3. Geometry Cutting Planes and Added Resolution
- 2.3. Mesh Editing Selection Groups
  - 2.3.1. Geometry Alignment and Visibility
  - 2.3.2. Selection Sub-Objects, Material IDs and Smoothing Groups
  - 2.3.3. Surface Subdivision and Vertex Painting

- 2.4. Mesh Editing Surface
  - 2.4.1. Geometry Offset and Deformation Brush
  - 2.4.2. Flat Mode and Editable Mesh
  - 2.4.3. Splines + Surface
- 2.5. Advanced Mesh Editing
  - 2.5.1. Editable Patch
  - 2.5.2. Model Sheet and Setup for Modeling
  - 2.5.3. Symmetry Tracing and Symmetry
- 2.6. User Personalization
  - 2.6.1. Display Floater and Panel Display Tool
  - 2.6.2. Object Properties and Preferences
  - 2.6.3. IU Personalization Short Cuts, Menus and Colors
  - 2.6.4. Visor Configuration
- 2.7. Object Distribution
  - 2.7.1. Spelling View
  - 2.7.2. Spacing Tool and SnapShot
  - 2.7.3. Cloning and Alignment Tool
  - 2.7.4. Matrixes Array
- 2.8. Geometric Operations
  - 2.8.1. Polygonal and Parametric Combination
  - 2.8.2. Polygonal and Shape Combination
  - 2.8.3. Polygonal and Boolean Combination
  - 2.8.4. Polygonal, Spline, Parametric and Boolean Combining
- 2.9. Other Tools
  - 2.9.1. Loops, Constraints and Edge Splitting
  - 2.9.2. Isoline and Colapsar Modifiers
  - 2.9.3. Polygon Counter and Optimization Types
- 2.10. Plugins and Scripts
  - 2.10.1. Plugins and Scripts Grass-O-Matic
  - 2.10.2. Creation of Grasses and Fibers with Grass-O-Matic
  - 2.10.3. Greeble Plugin
  - 2.10.4. Voronoi Script Fracture

### Module 3. 3D Modeling with *Graphite Tool*

- 3.1. Interface
  - 3.1.1. Functionality
  - 3.1.2. Enable the Tool
  - 3.1.3. Interface
- 3.2. Sub-objects and Selection
  - 3.2.1. Sub-objects
  - 3.2.2. Modify Topology
  - 3.2.3. Modify Selection
- 3.3. Editing
  - 3.3.1. Swift Loop
  - 3.3.2. Paint Connect
  - 3.3.3. Constraints
- 3.4. Geometry
  - 3.4.1. Relax
  - 3.4.2. Attach and Detach
  - 3.4.3. Create and Collapse
  - 3.4.4. Quadrify and Slice
- 3.5. Tools Similar to Polygon Mode
  - 3.5.1. Polygons
  - 3.5.2. Loops
  - 3.5.3. Tris
  - 3.5.4. Subdivision
  - 3.5.5. Visibility
  - 3.5.6. Align
  - 3.5.7. Smoothing and Hardening
- 3.6. PolyDraw 1
  - 3.6.1. Drag and Conform
  - 3.6.2. Step Build Over the Grid
  - 3.6.3. Step Build Over a Surface

- 3.7. PolyDraw 2
  - 3.7.1. Shapes and Topology
  - 3.7.2. Splines and Strips
  - 3.7.3. Surface and Branches
- 3.8. PaintDeform
  - 3.8.1. Shift Brush and Its Options
  - 3.8.2. Push/Pull Brush and Its Options
  - 3.8.3. Mirror and Other Options
- 3.9. Selection
  - 3.9.1. Closed and Open Selections and Saving Selections
  - 3.9.2. Select by Surfaces, Normal, Perspective or Random Parameters
  - 3.9.3. Select by Vertex, Distance, Symmetry or Color
- 3.10. Painting with Objects
  - 3.10.1. Object Catalogue
  - 3.10.2. Brush Options
  - 3.10.3. Functionality

## Module 4. 3D Modeling with ZBrush

- 4.1. ZBrush
  - 4.1.1. Interface and Basic Controls
  - 4.1.2. Subtools, Symmetry, Transpose and Deformation
  - 4.1.3. Brushes and Alphas
- 4.2. Main Tools
  - 4.2.1. Masks and Polygroups
  - 4.2.2. Subdivisions, Dynamesh and ZRemesher
  - 4.2.3. Modify Topology, Matcaps and BPR
- 4.3. Modification Tools
  - 4.3.1. Insert Multi Mesh
  - 4.3.2. Layers and Morph Target
  - 4.3.3. Projections and Extract
- 4.4. Advanced Tools
  - 4.4.1. Crease and Bevel
  - 4.4.2. Surface and Shadowbox
  - 4.4.3. Decimation Master
- 4.5. ZSpheres and Adaptive Skin
  - 4.5.1. Zspheres Controls
  - 4.5.2. ZSketch
  - 4.5.3. Adaptive Skin
- 4.6. Dynamesh and Advanced Zremesher
  - 4.6.1. Boolean
  - 4.6.2. Brushes
  - 4.6.3. Zremesher Using Guides
- 4.7. Curve Brushes
  - 4.7.1. Controls and Modifiers
  - 4.7.2. Curve Surface and Other Brushes
  - 4.7.3. Brush Creation with Curve
- 4.8. Hard Surface
  - 4.8.1. Segments with Masks
  - 4.8.2. Polygroupit
  - 4.8.3. Panel loops
  - 4.8.4. ZModeler
  - 4.8.5. Primitives
- 4.9. Modifiers
  - 4.9.1. Extender and Multi Slice
  - 4.9.2. Deformer and Blend Twist
  - 4.9.3. Taper and Flatten
  - 4.9.4. Bend Arc and Bend Curve
- 4.10. Transpose Master
  - 4.10.1. Posing a Character with Transpose Master
  - 4.10.2. Correct Details
  - 4.10.3. Prepare Character for Rendering



## Module 5. Texturing

- 5.1. Texturing
  - 5.1.1. Baking
  - 5.1.2. PBR Physically Based Rendering
  - 5.1.3. Basic and Compound Texturing
  - 5.1.4. Tileable Textures
- 5.2. Mapping Coordinates University of Valencia
  - 5.2.1. Unwrap and Seams
  - 5.2.2. UVWs Editor
  - 5.2.3. Editor Options
- 5.3. Object ID
  - 5.3.1. ID Assignment and Functionality
  - 5.3.2. Multisubject Material
  - 5.3.3. Application of Materials as Instances
- 5.4. HighPoly and Baking of Normals in 3DS Max
  - 5.4.1. HighPoly and LowPoly
  - 5.4.2. Projection Settings for Normal Map Baking
  - 5.4.3. Normal Map Texture Baking
  - 5.4.4. Normal Map Settings
- 5.5. Other Material Baking in 3DS Max
  - 5.5.1. Fuzzy Map Application and Baking
  - 5.5.2. Compound Materials
  - 5.5.3. Mask Settings
- 5.6. Retopology in 3DS Max
  - 5.6.1. Retopology Tools
  - 5.6.2. Retopology with Graphite Tool
  - 5.6.3. Retopology Settings
- 5.7. Texturing with 3DS Max
  - 5.7.1. Material Properties
  - 5.7.2. Texture Baking
  - 5.7.3. Textural Toasting Complete Map, Normal Map and AO Map

- 5.8. Texturing with Photoshop
  - 5.8.1. Coordinate Template
  - 5.8.2. Adding Details in Photoshop and Reimporting Template with Textures
  - 5.8.3. Tile a Texture
  - 5.8.4. Create Normal Map
- 5.9. Coordinates and Mapping with ZBrush
  - 5.9.1. UV Master
  - 5.9.2. Control Painting
  - 5.9.3. Unwrap and Flatten
- 5.10. Texturing with ZBrush
  - 5.10.1. Paint Mode
  - 5.10.2. Noise Maker
  - 5.10.3. Image Projection

## Module 6. Texturing with *Substance Painter*

- 6.1. Substance Painter
  - 6.1.1. Create New Projects and Reimport Models
  - 6.1.2. Basic Controls and Interface 2D and 3D Views
  - 6.1.3. Bakes
- 6.2. Baking Layers
  - 6.2.1. World Space Normal
  - 6.2.2. Ambient Occlusion
  - 6.2.3. Curvature
  - 6.2.4. Position
  - 6.2.5. ID, Normal, Thickness
- 6.3. Layers
  - 6.3.1. Base Color
  - 6.3.2. Roughness
  - 6.3.3. Metallic
  - 6.3.4. Material

- 6.4. Masks and Generators
  - 6.4.1. Layers and UVs
  - 6.4.2. Masks
  - 6.4.3. Procedural Generators
- 6.5. Material Base
  - 6.5.1. Types of Materials
  - 6.5.2. Customized Generators
  - 6.5.3. Creation of a Base Material from Scratch
- 6.6. Brushes
  - 6.6.1. Predefined Parameters and Brushes
  - 6.6.2. Alphas, Lazy Mouse and Symmetry
  - 6.6.3. Create Customized Brushes and Save Them
- 6.7. Particles
  - 6.7.1. Particle Brushes
  - 6.7.2. Properties of Particles
  - 6.7.3. Particles Using Masks
- 6.8. Projections
  - 6.8.1. Prepare Textures
  - 6.8.2. Stencil
  - 6.8.3. Cloning
- 6.9. Substance Share/Source
  - 6.9.1. Substance Share
  - 6.9.2. Substance Source
  - 6.9.3. Textures.com
- 6.10. Terminology.
  - 6.10.1. Normal Map
  - 6.10.2. Padding or Bleed
  - 6.10.3. Mipmapping

## Module 7. Rendering

- 7.1. Marmoset Toolbag
  - 7.1.1. Geometry Preparation and FBX Format
  - 7.1.2. Basic Concepts Importance of Geometry
  - 7.1.3. Links and Materials
- 7.2. Marmoset Toolbag Sky
  - 7.2.1. Environmental Setting
  - 7.2.2. Light Points
  - 7.2.3. Lights Outside the Sky
- 7.3. Marmoset Toolbag Details
  - 7.3.1. Shadow and Pose
  - 7.3.2. Procedural Materials
  - 7.3.3. Channels and Reflection
- 7.4. Real-Time Rendering with Marmoset Toolbag
  - 7.4.1. Image Export with Transparency
  - 7.4.2. Interactive Export Marmoset Viewer
  - 7.4.3. Film Export
- 7.5. Marmoset Toolbag Animated Cameras
  - 7.5.1. Model Preparation
  - 7.5.2. Camera
  - 7.5.3. Main Camera Interactive Animation
- 7.6. Marmoset Toolbag Advanced Animated Cameras
  - 7.6.1. Add New Cameras
  - 7.6.2. Parametric Animation
  - 7.6.3. Final Details
- 7.7. Marmoset Toolbag 4 Raytrace
  - 7.7.1. Subsurface
  - 7.7.2. Ray Tracing
  - 7.7.3. Add Cameras and Map Rendering

- 7.8. Rendering with Substance Painter Iray
  - 7.8.1. Iray Configuration
  - 7.8.2. Viewer Settings
  - 7.8.3. Display Settings
- 7.9. Rendering With ZBrush
  - 7.9.1. Material Configuration
  - 7.9.2. BPR Render and Lights
  - 7.9.3. BPR Masks and Final Rendering in Photoshop
- 7.10. Rendering With Keyshot
  - 7.10.1. From Zbrush to Keyshot
  - 7.10.2. Materials and Lighting
  - 7.10.3. Composition in Photoshop and Final Image

## Module 8. Rendering with V-Ray Engine in 3DS Max

- 8.1. V-Ray Render Engine Assignment
  - 8.1.1. Preparation of the Render Space
  - 8.1.2. Render Setup Options and Assign Render
  - 8.1.3. Optimize Render time
- 8.2. Lighting and Light Creation
  - 8.2.1. 3-Point Lighting
  - 8.2.2. Light Configuration
  - 8.2.3. Render Region
- 8.3. Creation and Application of Materials
  - 8.3.1. Vray Materials
  - 8.3.2. V-Ray Material Configuration
  - 8.3.3. Self-Illumination
- 8.4. From Substance Painter to V-Ray
  - 8.4.1. Connect Nodes and Material Settings
  - 8.4.2. Export Presets
  - 8.4.3. Configure Smart Material in V-Ray
- 8.5. Details and Positioning in the Scene
  - 8.5.1. Applying Shadows According to Model Position
  - 8.5.2. Adjust Model and Silhouette
  - 8.5.3. Metallic Base
- 8.6. Rounding Surfaces
  - 8.6.1. V-RayEdgeTex
  - 8.6.2. Functionality and Configuration
  - 8.6.3. Rendering with and without Rounding
- 8.7. Field of Vision
  - 8.7.1. Camera and Shot
  - 8.7.2. Camera Opening
  - 8.7.3. Field of Vision
- 8.8. Ambient Occlusion and Global Illumination
  - 8.8.1. GI and Render Elements
  - 8.8.2. V-RayExtraTex and VrayDirt
  - 8.8.3. Global Illumination Multiplier
- 8.9. Rendering of a Still Frame
  - 8.9.1. Adjust Render Values
  - 8.9.2. Save Final Rendering
  - 8.9.3. Composition of Ambient Occlusion
- 8.10. Rendering of a Sequence
  - 8.10.1. Camera Animation
  - 8.10.2. Rendering Options for Sequence
  - 8.10.3. Frame Assembly for the Sequence



## Module 9. Characters

- 9.1. Types of Characters
  - 9.1.1. Realistic and Cartoon/Stylized
  - 9.1.2. Humanoids and Creatures
  - 9.1.3. Anatomy and Proportions
- 9.2. Tips to Work with ZBrush
  - 9.2.1. Work with Reference and Transparencies Fitting and Transformation from 2D to 3D
  - 9.2.2. Joining Parts With Dynamesh Working in Pieces or in Conjunction With Polygroups and ZRemesher
  - 9.2.3. Lazy Mouse and GoZ
- 9.3. Sculpting a Head in ZBrush
  - 9.3.1. Primary Shapes and Proportions
  - 9.3.2. Eyelids and Eyes
  - 9.3.3. Nose, Ears and Lips
  - 9.3.4. ZRemesher for a Head
  - 9.3.5. Eyebrows and Eyelashes
  - 9.3.6. Details and Refinement
- 9.4. Clothing
  - 9.4.1. Clothes
  - 9.4.2. Armor
  - 9.4.3. Modeled Detail and With Noise Maker
- 9.5. Tips for Modeling
  - 9.5.1. Hands
  - 9.5.2. Styled Hair
  - 9.5.3. Extra Details With Alphas
- 9.6. Tips for Modeling Types of Materials
  - 9.6.1. Feathers
  - 9.6.2. Rocks and Minerals
  - 9.6.3. Scales

- 9.7. Hair with ZBrush
  - 9.7.1. Curve Brushes
  - 9.7.2. Long Hair With Curve Brush
  - 9.7.3. Short Hair or Animal Hair
- 9.8. Hair with Xgen
  - 9.8.1. References and Tool Preparation
  - 9.8.2. Application of Modifiers and Tools in Depth
  - 9.8.3. Lighting and Rendering
- 9.9. Posing With Transpose Master
  - 9.9.1. TPoseMesh Working with Smooth Masks, Move and Rotate
  - 9.9.2. The Importance of the Silhouette
  - 9.9.3. TPose SubTool Correct and Finish Detailing
- 9.10. Character Props and Environment
  - 9.10.1. Accessories and Weapons Elements that Speak of the Character's History
  - 9.10.2. Environment and Background Elements Enhance the Character
  - 9.10.3. Own Lighting for the Character

## Module 10. Export to Unreal

- 10.1. Unreal Engine
  - 10.1.1. Game Exporter
  - 10.1.2. Create New Projects and Controls
  - 10.1.3. Import Models to Unreal
- 10.2. Basic Material Properties
  - 10.2.1. Create Materials and Nodes
  - 10.2.2. Constant and Its Values
  - 10.2.3. Texture Sample
- 10.3. Common Material Nodes
  - 10.3.1. Multiply
  - 10.3.2. Texture Coordinate
  - 10.3.3. Add
  - 10.3.4. Fresnel
  - 10.3.5. Panner



- 10.4. Materials and Bloom
  - 10.4.1. Linear Interpolate
  - 10.4.2. Power
  - 10.4.3. Clamp
- 10.5. Textures to Modify Material
  - 10.5.1. Masks
  - 10.5.2. Transparent Materials
  - 10.5.3. Color Match
- 10.6. Basic Lighting
  - 10.6.1. Light Source
  - 10.6.2. Skylight
  - 10.6.3. Fog
- 10.7. Fill and Creative Lighting
  - 10.7.1. Point Light
  - 10.7.2. Spot Light and Rect Light
  - 10.7.3. Objects as Light Sources
- 10.8. Night Lighting
  - 10.8.1. Light Source Properties
  - 10.8.2. Fog Properties
  - 10.8.3. Skylight Properties
- 10.9. Lightmaps
  - 10.9.1. Viewer Modes Lightmap Density
  - 10.9.2. Improve Lightmap Resolution
  - 10.9.3. Lightmass Importance Volume
- 10.10. Rendering
  - 10.10.1. Cameras and Their Properties
  - 10.10.2. Basic Post-processing
  - 10.10.3. High Resolution Screenshot

# 06

# 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.*

## A learning method that is different and innovative



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

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.



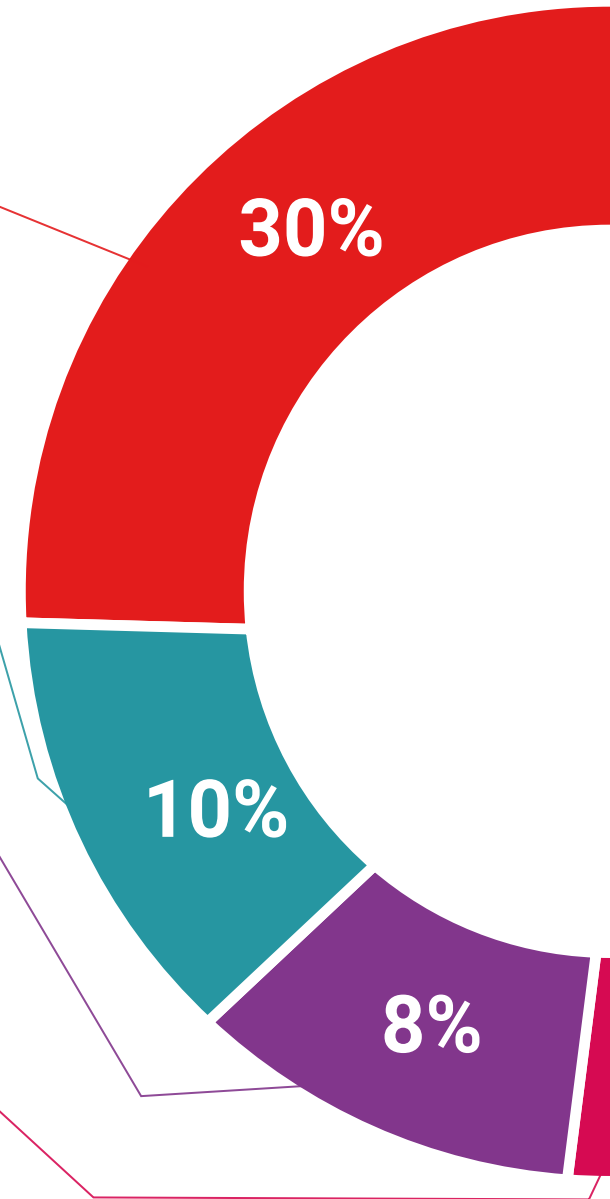
### Practising Skills and Abilities

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.

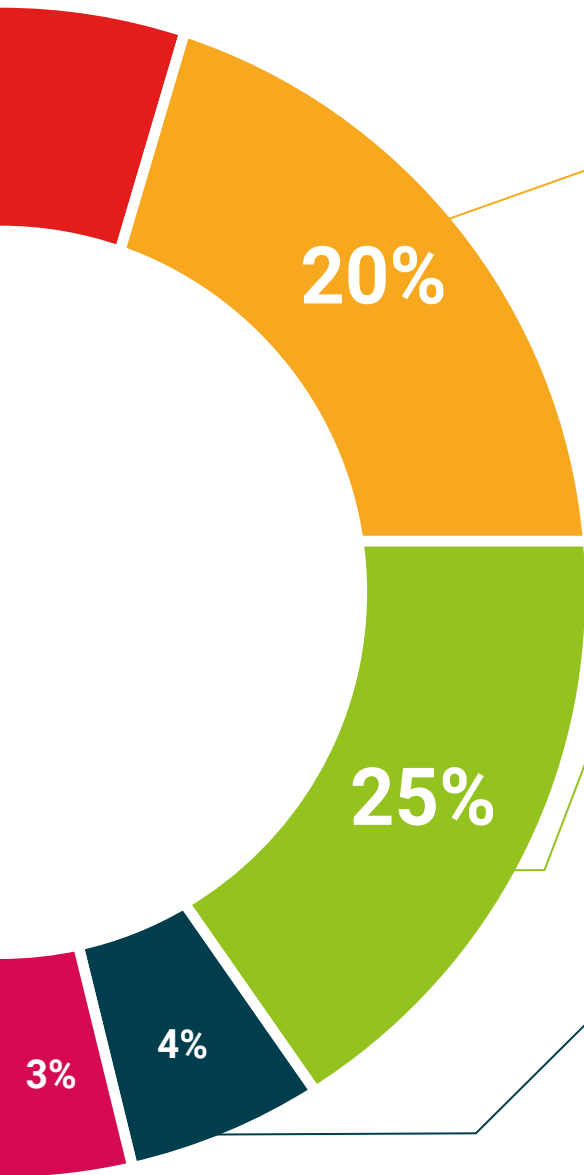


### Additional Reading

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.



# 07 Certificate

The Professional Master's Degree 3D Texture Modeling guarantees students, in addition to the most rigorous and up-to-date education, access to a Professional Master's Degree 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 **Professional Master's Degree diploma in 3D Texture 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.

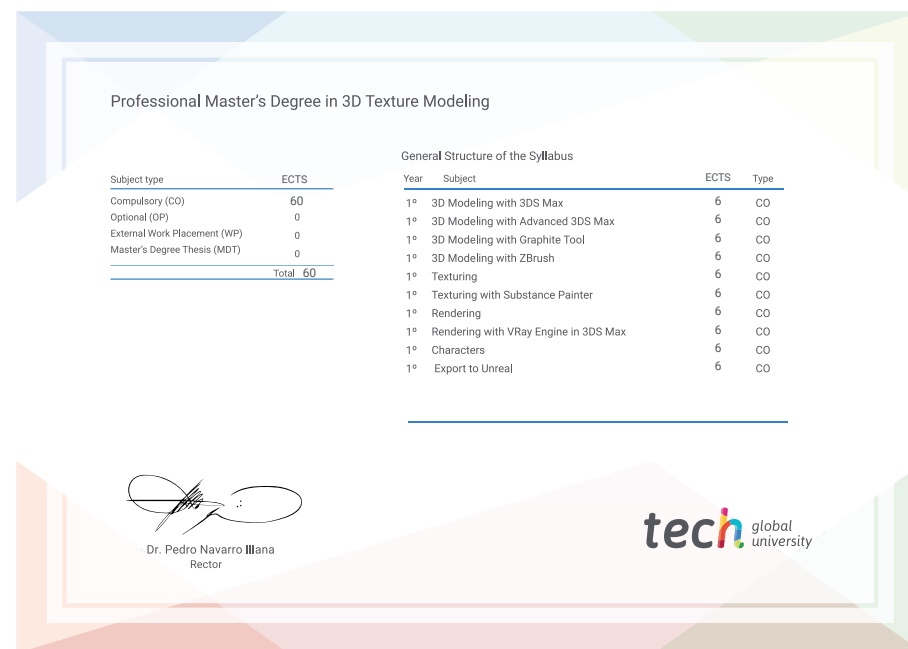
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Professional Master's Degree in 3D Texture Modeling**

Modality: **online**

Duration: **12 months**

Accreditation: **60 ECTS**



\*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.

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



## Professional Master's Degree

### 3D Texture Modeling

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Global University
- » Credits: 60 ECTS
- » Schedule: at your own pace
- » Exams: online

Professional Master's  
Degree  
3D Texture Modeling

