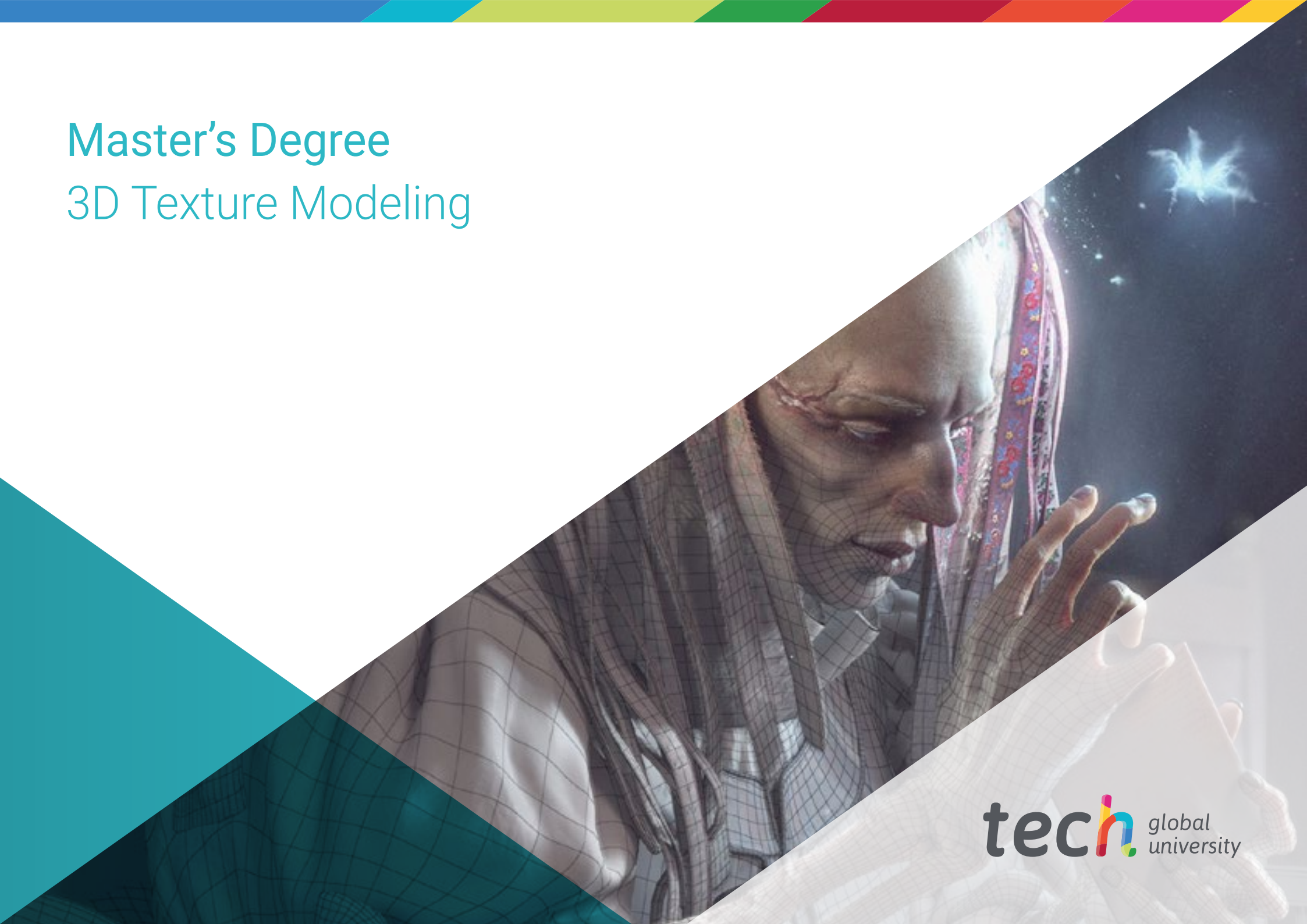
Master's Degree
3D Texture Modeling



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Master's Degree

3D Texture Modeling

- Modality: **Online**
- Duration: **12 months.**
- Certificate: **TECH Global University**
- Accreditation: **60 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/us/design/master-degree/master-3d-texture-modeling

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01

Introduction to the Program

The digital art industry is undergoing significant expansion, driven by the growing demand for hyper-realistic visual content in sectors such as video games, animation, film, and interactive design. According to data from the World Economic Forum, professions related to 3D Modeling and virtual environments are expected to grow by 35% over the next decade. In response, TECH presents an advanced academic program designed to refine competencies and skills in this important field through a 100% online learning experience. By combining technological innovation, artistic perspective, and active methodologies, graduates will follow a specialized pathway to master three-dimensional modeling with a highly professional focus.

With this 100% online Master's Degree, you will master the most innovative 3D Modeling techniques and create highly realistic Textures"

The development of 3D models and digital textures is a key competency for professionals who aspire to stand out in industries such as video games, film, animation, and industrial design. Likewise, the creation of realistic environments and complex characters requires advanced command of digital techniques and an artistic vision capable of integrating creativity with technical precision. This evolution has completely transformed the way visual content is conceived, making it essential for specialists in the field to pursue ongoing professional development. Furthermore, the global video game industry has surpassed 180 billion dollars in annual revenue, with a growing demand for artists specialized in 3D modeling, texturing, and immersive environments. This context provides an ideal scenario for those wishing to advance their careers at the intersection of art and technology.

In response to this dynamic environment, TECH has developed this exclusive Master's Degree in 3D Modeling and Textures, enabling professionals to specialize in cutting-edge techniques of digital sculpting and hyper-realistic material creation. Through a carefully structured academic pathway, this program offers a deep and updated perspective on the creative and technical processes that shape modern workflows, using industry-standard software such as Blender, ZBrush, Substance Painter, and Unreal Engine.

Thanks to its innovative 100% online methodology, together with the Relearning system, TECH provides an immersive academic experience adapted to each student's pace, ensuring effective knowledge acquisition through interactive resources and real production case studies. Moreover, its faculty—composed of active professionals—brings current industry demands and trends into the academic environment. As such, this academic program represents a unique opportunity for those seeking to excel in a competitive environment, offering an innovative, accessible, and internationally recognized educational experience.

This **Master's Degree in 3D Texture Modeling** contains the most complete and up-to-date university program on the market. Its most notable features are:

- The development of practical case studies presented by experts in 3D Texture Modeling
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- Practical exercises where self-assessment can be used to improve learning
- Special emphasis on innovative methodologies in 3D Texture Modeling
- 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 develop a deep understanding of materials and their behavior in three-dimensional environments"

You will use modern UV mapping tools to create precise and optimized coordinates that enable efficient texturing"

You will create detailed textures that simulate different types of surfaces such as skin, metal, or fabric.

Take advantage of TECH's exclusive Relearning methodology, which allows you to set your own schedule and pace of study.

The teaching faculty includes professionals in the field of 3D Texture Modeling, who bring their professional expertise to this program, as well as renowned specialists from leading organizations 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 an immersive learning experience designed to prepare for real-life situations.

This program is designed around Problem-Based Learning, whereby the student must try to solve the different professional practice situations that arise throughout the program. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts.

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Why Study at TECH?

TECH is the world's largest online university. With an impressive catalog of more than 14,000 university programs, available in 11 languages, it is positioned as a leader in employability, with a 99% job placement rate. In addition, it has a huge faculty of more than 6,000 professors of the highest international prestige.

Study at the largest online university in the world and ensure your professional success. The future begins at TECH"

The world's best online university, according to FORBES

The prestigious Forbes magazine, specialized in business and finance, has highlighted TECH as "the best online university in the world" This is what they have recently stated in an article in their digital edition in which they echo the success story of this institution, "thanks to the academic offer it provides, the selection of its teaching staff, and an innovative learning method oriented to form the professionals of the future".

The best top international faculty

TECH's faculty is made up of more than 6,000 professors of the highest international prestige. Professors, researchers and top executives of multinational companies, including Isaiah Covington, performance coach of the Boston Celtics; Magda Romanska, principal investigator at Harvard MetaLAB; Ignacio Wistumba, chairman of the department of translational molecular pathology at MD Anderson Cancer Center; and D.W. Pine, creative director of TIME magazine, among others.

The world's largest online university

TECH is the world's largest online university. We are the largest educational institution, with the best and widest digital educational catalog, one hundred percent online and covering most areas of knowledge. We offer the largest selection of our own degrees and accredited online undergraduate and postgraduate degrees. In total, more than 14,000 university programs, in ten different languages, making us the largest educational institution in the world.

The most complete syllabuses on the university scene

TECH offers the most complete syllabuses on the university scene, with programs that cover fundamental concepts and, at the same time, the main scientific advances in their specific scientific areas. In addition, these programs are continuously updated to guarantee students the academic vanguard and the most demanded professional skills. and the most in-demand professional competencies. In this way, the university's qualifications provide its graduates with a significant advantage to propel their careers to success.

A unique learning method

TECH is the first university to use Relearning in all its programs. This is the best online learning methodology, accredited with international teaching quality certifications, provided by prestigious educational agencies. In addition, this innovative academic model is complemented by the "Case Method", thereby configuring a unique online teaching strategy. Innovative teaching resources are also implemented, including detailed videos, infographics and interactive summaries.

The official online university of the NBA

TECH is the official online university of the NBA. Thanks to our agreement with the biggest league in basketball, we offer our students exclusive university programs, as well as a wide variety of educational resources focused on the business of the league and other areas of the sports industry. Each program is made up of a uniquely designed syllabus and features exceptional guest hosts: professionals with a distinguished sports background who will offer their expertise on the most relevant topics.

Leaders in employability

TECH has become the leading university in employability. Ninety-nine percent of its students obtain jobs in the academic field they have studied within one year of completing any of the university's programs. A similar number achieve immediate career enhancement. All this thanks to a study methodology that bases its effectiveness on the acquisition of practical skills, which are absolutely necessary for professional development.

Google Premier Partner

The American technology giant has awarded TECH the Google Premier Partner badge. This award, which is only available to 3% of the world's companies, highlights the efficient, flexible and tailored experience that this university provides to students. The recognition not only accredits the maximum rigor, performance and investment in TECH's digital infrastructures, but also places this university as one of the world's leading technology companies.

The top-rated university by its students

Students have positioned TECH as the world's top-rated university on the main review websites, with a highest rating of 4.9 out of 5, obtained from more than 1,000 reviews. These results consolidate TECH as the benchmark university institution at an international level, reflecting the excellence and positive impact of its educational model.

03

Syllabus

This syllabus is structured to provide an in-depth specialization in three-dimensional modeling and digital texturing, using the most in-demand software in the industry. Throughout the academic journey, graduates will refine their skills with tools such as 3DS Max, Blender, and ZBrush, mastering both basic and advanced techniques. They will also explore texturing with Substance Painter, rendering with engines such as VRay, and high-quality character creation. The integration of workflows into Unreal Engine will allow graduates to participate in interactive projects, enhancing their profile for real-time environments.

You will apply the PBR-based workflow to create highly realistic materials that rigorously simulate the interaction of light with surfaces"

Module 1. 3D Modeling with 3DS Max

1.1. 3D Modeling with 3DS Max
- 1.1.1. Orbit, Viewers 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. Align and Symmetry

1.3. Main Operations
- 1.3.1. Duplicate, Interactive Selection and Selection Groups and Elements
- 1.3.2. Layers, Grid, Snap and 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. Objects Dispersion Scatter
- 1.6.3. Morphism Morph

1.7. 2D Shapes *Splines*
- 1.7.1. *Splines* and its Options
- 1.7.2. The Line and Vertex Types
- 1.7.3. Vertex, Segment and *Splines* Subobjects

1.8. 2D Shapes Advanced *Splines*
- 1.8.1. Editable *Splines* 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. Modifiers of *Splines*
- 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. Shape Merge

Module 2. Advanced 3D Modeling with 3DS Max

2.1. Mesh Editing Polygonal Editing
- 2.1.1. Polygonal Editing EditablePoly and EditPoly
- 2.1.2. Panels, Selection and Flexible Selection
- 2.1.3. TurboSmooth, MeshSmooth and HSDS Modifier

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 Subobjects, Material IDs and Smoothing Groups
- 2.3.3. Surface Subdivision and Vertex Painting

2.4. Mesh Editing *Surface*
- 2.4.1. Geometry Displacement and Deformation Brush
- 2.4.2. Flat Mode and *EditableMesh*
- 2.4.3. *Splines + Surface*

2.5. Advanced Mesh Editing
- 2.5.1. *EditablePatch*
- 2.5.2. *Model Sheet* and *Setup* for Modeling
- 2.5.3. Symmetry Tracing and *Symmetry*

2.6. User Customization
- 2.6.1. Display Floater Tool and *Panel Display*
- 2.6.2. Object Properties and Preferences
- 2.6.3. UI Personalization Shortcuts, Menus and Colors
- 2.6.4. Viewer Configuration

2.7. Object Distribution
- 2.7.1. Orthographic View
- 2.7.2. Spacing Tool and SnapShot
- 2.7.3. Cloning and Alignment Tool
- 2.7.4. Matrices. Array

2.8. Geometric Operations
- 2.8.1. Polygonal and Parametric Combination
- 2.8.2. Polygonal Combination and Shapes
- 2.8.3. Polygonal and *Boolean* Combination
- 2.8.4. Polygonal, *Spline*, Parametric and *Boolean* Combination

2.9. Other Tools
- 2.9.1. *Loops*, Constraints and Edge Splitting
- 2.9.2. *Isoline* and Collapse Modifiers
- 2.9.3. Polygon Counter and Types of Optimization

2.10. *Plugins* and *Scripts*
- 2.10.1. *Plugins* and *Scripts*. *Grass - o - Matic*
- 2.10.2. Creation of Herbs and Fibers with *Grass -o-Matic*
- 2.10.3. *Plugin Greeble*
- 2.10.4. *Script Voronoi*. Fracture

Module 3. 3D Modeling with Blender

3.1. Interface
- 3.1.1. Initial Installation and Configuration
- 3.1.2. Pull-Down Menus and Interface Modes
- 3.1.3. Navigation in the 3D Environment

3.2. Object Creation and Selection
- 3.2.2. Modifying Basic Topology
- 3.2.3. Modifying Basic Topology

3.3. Edition
- 3.3.1. Add New Geometry
- 3.3.2. Modifying Geometries
- 3.3.3. Modifiers and Mirror

3.4. Geometry
- 3.4.1. Smooth Modifier
- 3.4.1. Merging and Separating Meshes
- 3.4.2. Untriangualize

3.5. *Edit Mode*
- 3.5.1. Basic Modeling Units
- 3.5.2. *Loops*
- 3.5.3. Tris and Ngones
- 3.5.4. Subdivision - Tool and Modifier
- 3.5.5. Visibility - Hide and Reveal Objects
- 3.5.6. Snap
- 3.5.7. Smooth or Flat Preview Modes

3.6. Retopology
- 3.6.1. Conforming One Mesh on Top of Another
- 3.6.2. Creating Objects Using the 3D Cursor

3.7. Organic Model
- 3.7.1. Shape and Topology
- 3.7.2. Use of Curves
- 3.7.3. *Surface* and *Nurbs*

3.8. *Sculpting*
- 3.8.1. Brushes and Commands
- 3.8.2. Use of Remesher

3.9. Selection
- 3.9.1. Meshes Selection
- 3.9.2. Modification of Selections
- 3.9.3. Selecting by Vertices, Edges or Faces

3.10. Vertex Paint
- 3.10.1. Brush Options
- 3.10.3. Creating IDMaps

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 y 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. Booleans
- 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. Creating Brushes 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. Extend 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. Corregir detalles
- 4.10.3. Prepare Character for Rendering

Module 5. Texturing

5.1. Texturing
- 5.1.1. Baking
- 5.1.2. PBR. Physycally Based Rendering
- 5.1.3. Basic and Composite Texturing
- 5.1.4. Tileable Textures

5.2. Mapping Coordinates. UV
- 5.2.1. Unwrap and Seams
- 5.2.2. UVW 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 Normal Baking in 3DS Max
- 5.4.1. HighPoly and LowPoly
- 5.4.2. Projection Settings for Normal Map Baking
- 5.4.3. Projection Settings for Normal Map Baking
- 5.4.4. Normal Map Settings

5.5. Baking Other Materials in 3DS Max
- 5.5.1. Application and Baking of Diffuse Map
- 5.5.2. Composite Material
- 5.5.3. Mask Adjustment

5.6. Retopology in 3DS Max
- 5.6.1. Retopology Tools
- 5.6.2. Retopology with Graphite Tool
- 5.6.3. Rhetopology 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. Shading a Texture
- 5.8.4. Create Normal Map

5.9. Mapping coordinates 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. Painting Mode
- 5.10.2. Noise Maker
- 5.10.3. Projection of Images

Module 6. Substance Painter Texturing

6.1. Substance Painter
- 6.1.1. Create New Project and Reimport Models
- 6.1.2. Basic Controls and Interface. 2D and 3D Views
- 6.1.3. Baking

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. Base Material
- 6.5.1. Types of Material
- 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 Custom 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. Preparing 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. Acolchado o Sangrado
- 6.10.3. Mipmapping

Module 7. Rendering

7.1. Marmoset Toolbag
- 7.1.1. Geometry Preparation and FBX Formatting
- 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. Lighting Points
- 7.2.3. Lights outside Sky

7.3. Marmoset Toolbag Details
- 7.3.1. Shade 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. Cameras
- 7.5.3. Main Camera. Interactive Animation

7.6. Marmoset Toolbag. Advanced Animated Cameras
- 7.6.1. Adding New Cameras
- 7.6.2. Parametric Animation
- 7.6.3. Final Details

7.7. Marmoset Toolbag 4. Ray Trace
- 7.7.1. *Subsurface*
- 7.7.2. *Ray Tracing*
- 7.7.3. Adding Cameras and Map Rendering

7.8. Substance Painter Rendering IRay
- 7.8.1. IRay Settings
- 7.8.2. *Viewer Settings*
- 7.8.3. *Display Settings*

7.9. Rendering with ZBRush
- 7.9.1. Material Settings
- 7.9.2. BPR Render and Lights
- 7.9.3. BPR Masks and Final Rendering in Photoshop

7.10. Keyshot Rendering
- 7.10.1. From Zbrush to Keyshot
- 7.10.2. Materials and Lighting
- 7.10.3. Photoshop Compositing and Final Image

Module 8. Rendering with VRay Engine in 3DS Max

8.1. VRay Render Engine Assignment
- 8.1.1. Preparation of the Rendering Space
- 8.1.2. Render *Setup* Options and Assign Render
- 8.1.3. Optimize Rendering Time

8.2. Lighting and Light Creation
- 8.2.1. 3-Point Lighting
- 8.2.2. Light Setup
- 8.2.3. *Render Region*

8.3. Creation and Application of Materials
- 8.3.1. VRay Materials
- 8.3.2. VRay Materials Settings
- 8.3.3. *Self-Illumination*

8.4. From Substance Painter to VRay
- 8.4.1. Connect Nodes and Material Settings
- 8.4.2. Export *Presets*
- 8.4.3. Set Up Smart Material in VRay

8.5. Details and Positioning in the Scene
- 8.5.1. Application of Shades According to the Position of the Model
- 8.5.2. Adjust Model and Silhouette
- 8.5.3. Metallic Base

8.6. Surface Rounding
- 8.6.1. VRayEdgeTex
- 8.6.2. Functionality and Setup
- 8.6.3. Rendering With and Without Rounding

8.7. Field of View
- 8.7.1. Camera and Shot
- 8.7.2. Camera Aperture
- 8.7.3. Field of View

8.8. Ambient Occlusion and Global Illumination
- 8.8.1. GI and Render Elements
- 8.8.2. VRayExtraTex and VrayDirt
- 8.8.3. Global Illumination Multiplier

8.9. Rendering of a Static Frame
- 8.9.1. Adjust Render Values
- 8.9.2. Save Final Render
- 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 for Working with ZBrush
- 9.2.1. Working with References 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 Details and 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 or 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 Fur

9.8. Hair with XGen
- 9.8.1. References and Tool Preparation
- 9.8.2. Application of Modifiers and Advanced Tools
- 9.8.3. Lighting and Rendering

9.9. Posing with Transpose Master
- 9.9.1. TPoseMesh. Working with Smoothed Masks, Move and Rotate
- 9.9.2. The Importance of Silhouette
- 9.9.3. TPose SubtTool. Correcting and Refining Details

9.10. Character Props and Environment
- 9.10.1. Accessories and Weapons. Elements that Tell the Character's Story
- 9.10.2. Environment and Background Elements. Enhancing the Character
- 9.10.3. Custom Lighting for the Character

Module 10. Exports to Unreal

10.1. Unreal Engine
- 10.1.1. *Game Exporter*
- 10.1.2. Create New Project and Controls
- 10.1.3. Importing Models into Unreal

10.2. Basic Properties of Materials
- 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 the Material
- 10.5.1. Masks
- 10.5.2. Transparent Textures
- 10.5.3. Match Color

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 y 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 Lightmaps Resolution
- 10.9.3. Lightmass Importance Volume

10.10. Rendering
- 10.10.1. Cameras and Their Parameters
- 10.10.2. Basic Post-Processing
- 10.10.3. *High-Resolution Screenshot*

04

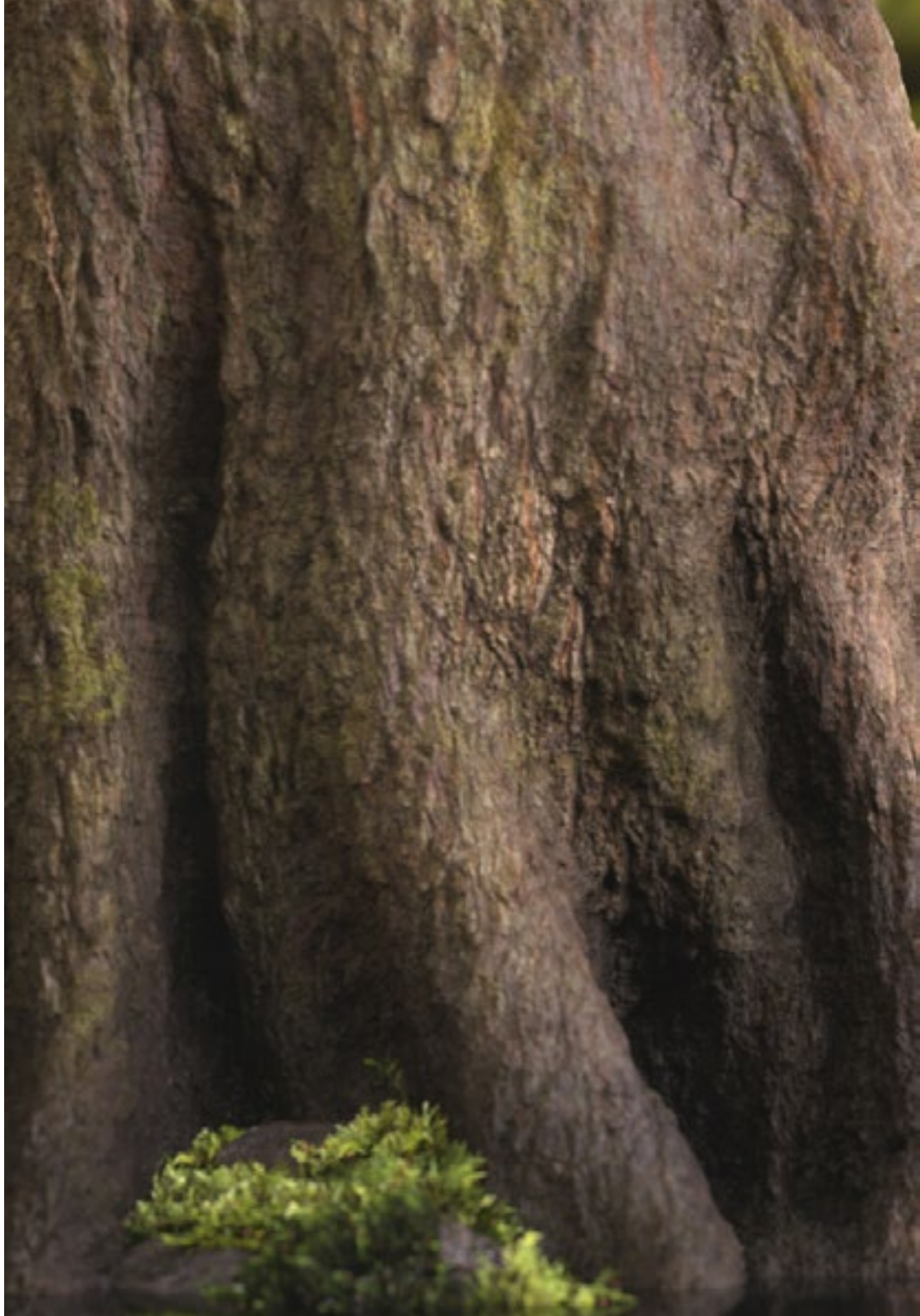
Teaching Objectives

One of the main objectives of this academic program at TECH is to strengthen both the technical and artistic mastery of 3D modeling and digital texturing in highly demanding professional contexts. Accordingly, graduates will refine their ability to develop complex three-dimensional models, apply realistic texturing, and manage workflows using industry-standard software. They will also acquire competencies in advanced rendering and in exporting content to graphics engines such as Unreal Engine. By the end of the program, they will be fully prepared to integrate into multidisciplinary teams, lead creative processes, and effectively respond to the demands of the industry.

Become a creator of 3D assets, capable of mastering both sculptural detail and optimization for interactive experiences"

General Objectives

- Master the essential 3D modeling tools used in the industry, such as 3DS Max, Blender, and ZBrush
- Apply advanced texturing techniques using PBR methods and specialized software such as Substance Painter
- Develop skills in realistic rendering with professional engines such as VRay, optimizing materials, lighting, and camera settings
- Create detailed three-dimensional characters with anatomical and technical knowledge for application in video games and animation
- Export and adapt models and textures for integration into real-time graphics engines such as Unreal Engine
- Interpret visual and artistic references to transform concepts into solid, coherent, and optimized digital models



Specific Objectives

Module 1. 3D Modeling with 3DS Max

- Understand the interface and basic polygonal modeling tools in 3DS Max
- Create simple and complex three-dimensional objects using mesh editing techniques

Module 2. Advanced 3D Modeling with 3DS Max

- Apply advanced modeling techniques with modifiers and non-destructive modeling
- Optimize models to facilitate subsequent texturing and animation

Module 3. 3D Modeling with Blender

- Master polygonal modeling in Blender with a focus on geometric precision
- Implement efficient workflows within the Blender environment for production

Module 4. 3D Modeling with ZBrush

- Sculpt high-resolution organic models using digital modeling techniques
- Use tools such as Dynamesh and ZRemesher to control model topology

Module 5. Texturing

- Understand the fundamentals of PBR texturing and its practical application
- Develop material maps for realistic surfaces

Module 6. Substance Painter Texturing

- Use procedural painting tools and smart materials in Substance Painter
- Export properly configured textures for use in graphics engines

Module 7. Rendering

- Apply techniques for lighting, materials, and cameras to produce high-quality static renders
- Adjust rendering parameters to optimize both time and image quality

Module 8. Rendering with VRay Engine in 3DS Max

- Configure VRay as the primary rendering engine and master its key parameters
- Create photorealistic materials with VRay and adjust global and indirect lighting

Module 9. Characters

- Model 3D characters based on anatomical structures, applying realistic proportions and details
- Prepare character geometry for subsequent rigging and animation

Module 10. Exports to Unreal

- Export models, textures, and materials properly optimized for Unreal Engine
- Configure scenes within the engine to visualize models in real time

You will gain a comprehensive vision that covers the entire process—from conceptual modeling to professional export into rendering engines and video games”

05

Career Opportunities

Graduates of this Master's Degree in 3D Texture Modeling will be able to work as 3D artists, specialized modelers, character designers, or texturing specialists in video game, film, animation, or advertising studios. They will also be prepared to join development teams for interactive environments or virtual reality, as well as to collaborate on visual architecture projects and industrial simulations. As a result, this academic program represents a direct pathway into expanding creative sectors, where visual quality and technical efficiency are highly valued.

Do you want to work as a 3D Texturing Specialist? Make it possible with this university program in just 12 months"

Graduate Profile

Graduates of this program will become professionals with comprehensive mastery of 3D modeling and digital texturing, capable of transforming concepts into highly detailed three-dimensional assets. They will be prepared to work with advanced tools and will understand the entire workflow through to implementation in engines such as Unreal Engine. Furthermore, their profile will be highly competitive, combining artistic sensitivity with technical precision, and adaptable to collaborative and demanding environments. They will also possess the skills to lead creative processes in industries connected to digital art, entertainment, and visual technology.

You will adapt textures for different platforms, ensuring a smooth and realistic visual experience.

- **Visual Thinking:** Develop a critical and artistic perspective focused on detail, proportion, and professional finishing of each 3D piece.
- **Three-Dimensional Modeling:** Create complex and detailed structures using professional software such as 3DS Max, Blender, and ZBrush, adapting to diverse creative and technical needs.
- **Digital Texturing:** Master PBR techniques to apply realistic textures to 3D models, integrating material maps that optimize visual results in interactive environments.
- **Advanced Rendering:** Configure lighting, materials, and cameras in rendering engines such as VRay, achieving high-quality images with both artistic and technical focus.

After completing the university program, you will be able to apply your knowledge and skills in the following positions:

1. **3D Artist in Audiovisual Production:** Responsible for modeling, texturing, and rendering environments, objects, and characters for films, series, and visual effects.
2. **Virtual Environment Designer:** Specializes in creating three-dimensional spaces for video games, simulations, and immersive experiences in virtual or augmented reality.
3. **3D Modeler for Video Games:** Develops optimized real-time models ready for integration into engines such as Unreal Engine or Unity.
4. **Digital Sculpting Technician:** Creates highly detailed characters and organic elements using tools such as ZBrush.
5. **PBR Texture Artist:** Applies physically realistic textures to 3D models, managing material maps and reflections to achieve high-quality visual finishes.
6. ***Render Artist:*** Configures lighting, cameras, and materials to generate photorealistic images with rendering engines such as VRay or Arnold.
7. **3D Visual Developer for Advertising:** Creates three-dimensional assets for visual campaigns, products, and commercial animations.
8. **3D Export Specialist for Real-Time Applications**: Prepares models and textures for correct implementation in graphics engines without performance loss.
9. **3D Character Designer:** Dedicated to creating human figures, creatures, or fantastical beings for film, television, or video games, with a focus on anatomy and expressiveness.
10. **3D Art Supervisor:** Coordinates creative teams in three-dimensional projects, ensuring the aesthetic, technical, and narrative coherence of each production.

06

Software Licenses Included

TECH is a leading reference in the academic world for combining the latest technology with teaching methodologies to enhance the teaching-learning process. To achieve this, it has established a network of alliances that allows it to access the most advanced software tools used in the professional world.

Upon enrolling, you will receive, completely free of charge, academic credentials for the following professional software applications"

TECH has established a network of professional alliances with the leading providers of software applied to various professional fields. These alliances allow TECH to access hundreds of software applications and licenses, making them available to its students.

The academic *software* licenses will allow students to use the most advanced applications in their professional field, so they can become familiar with them and master their use without incurring additional costs. TECH will manage the process of acquiring the licenses so that students can use the software without limitations for the entire duration of the Master's Degree in 3D Texture Modeling. Moreover, they will be able to do so completely free of charge.

TECH will provide free access to the following software applications:

Google Career Launchpad

Google Career Launchpad is a solution for developing digital skills in technology and data analysis. With an estimated value of **5,000 dollars**, it is included **for free** in TECH's university program, providing access to interactive labs and certifications recognized in the industry.

This platform combines technical training with practical cases, using technologies such as BigQuery and Google AI. It offers simulated environments to work with real data, along with a network of experts for personalized guidance.

Arnold

Arnold is a world-class rendering engine, valued at **480 euros**, which will be available **at no cost** to graduates for the entire duration of the program. Renowned for its precision and realism, it is used in leading studios such as Sony Pictures Imageworks to produce photorealistic imagery for film and video games.

This platform stands out for its efficiency in handling heavy scenes, maintaining quality without sacrificing speed. It offers full integration with leading software such as Maya and Houdini, and its node-based system facilitates an intuitive workflow. Arnold is the preferred tool of visual effects professionals worldwide.

Flame

Flame is available **free of charge** during the academic program, providing professional access to an advanced post-production platform with a commercial value of **4,800 euros**. Widely used in film and advertising environments, this tool offers integrated solutions for editing, VFX, and complex visual design.

This platform enhances technical skills through professional real-time workflows. Its nodal composition capabilities, combined with Artificial Intelligence–based tools, enable users to tackle highly complex projects with efficiency. The graphic environment facilitates the precise design of high-impact visual content, optimizing every stage of the creative process.

Unreal Engine

Unreal Engine is a high-performance graphics engine widely used in the creative industry. Its versatility positions it as a fundamental tool for designing immersive digital environments with exceptional detail. During this academic program, students will have **free access** to this platform, valued at **1,850 dollars**.

Thanks to this, professionals will be able to create highly realistic interactive worlds using advanced techniques in geometry, dynamic lighting, and material simulation. **Unreal Engine** also provides cutting-edge methods that allow developers to optimize workflows efficiently and manage complex environments with high visual impact.

07

Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.

TECH will prepare you to face new challenges in uncertain environments and achieve success in your career"

The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.
The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

"At TECH you will NOT have live classes (which you might not be able to attend)"

The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

> *TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want"*

Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.

Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

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

A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.

"The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule"

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.

The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.

You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.

As such, the best educational materials, thoroughly prepared, will be available in this program:

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.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.

Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.

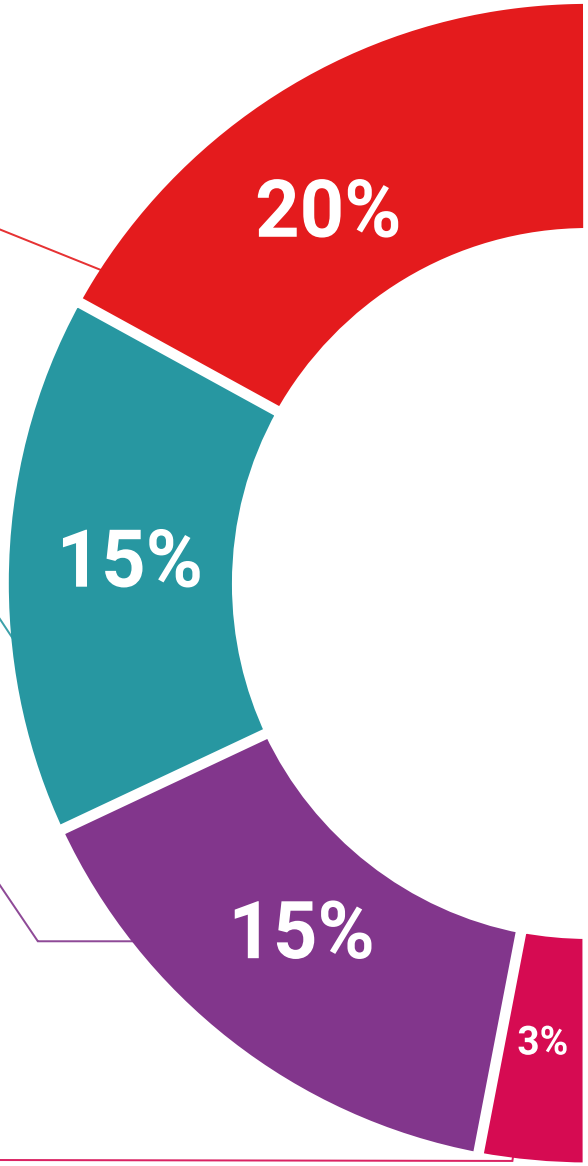
Interactive Summaries

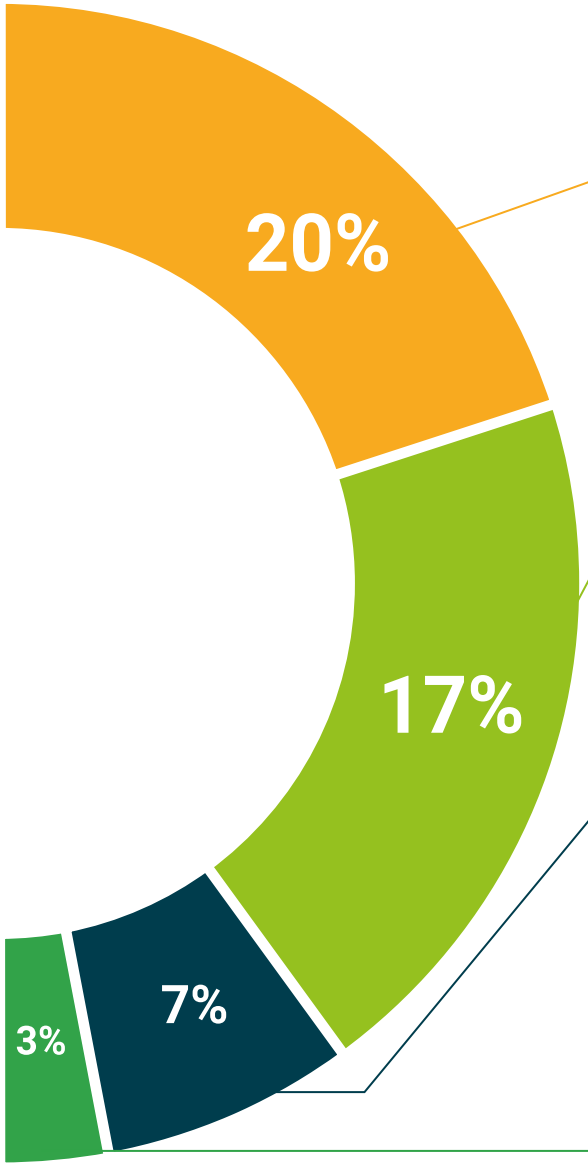
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

Additional Reading

Recent articles, consensus documents, international guides... In our virtual library you will have access to everything you need to complete your education.





Case Studies

Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.

Testing & Retesting

We periodically assess and re-assess your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.

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 for future difficult decisions.

Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical and effective way to help students progress in their learning.

08

Teaching Staff

The teaching faculty of this academic program is composed of distinguished professionals in the fields of Design, digital art, and 3D production. With extensive experience in three-dimensional projects, they ensure expert and up-to-date guidance in every module. In addition, the program's practical and creative approach will enable students to train with real cases and professional processes, enriching their profile with innovative perspectives aligned with the highest standards of the contemporary digital industry. In this way, graduates will be able to stand out in a highly competitive sector.

You will benefit from the personalized guidance of the teaching team, made up of renowned experts in 3D Modeling and Texturing"

Management

Dr. Vidal Peig, Teresa

- Specialist in Arts and Technology (digital art, 2D, 3D, VR and AR)
- Designer and creator of 2D character sketches for mobile video games
- Designer at Sara Lee, Motos Bordy, Hebo and Full Gass
- Teacher and director of Master's Degree in Video Game Programming
- Professor at the University of Girona
- PhD in Architecture from the Polytechnic University of Catalonia
- Degree in Fine Arts from the University of Barcelona

Teachers

Mr. Alcalde Perelló, Dimas

- Specialist in artistic creation for video games and applied games
- Lead artist at BluetechWorlds
- Teacher in the Artistic creation for videogames and applied games degree, ENTI UB
- Graduate in Artistic creation for videogames and applied games, Universitat de Barcelona
- Master's Degree in Teacher Training for Compulsory Secondary Education and Baccalaureate, Vocational Training and Language Teaching by the University of La Rioja UNIR
- Technician in 3D Animation, Games and Interactive Environments by the Center for Photographic Studies.

Ms. Jiménez Vaquero, Laura

- Organic and props modeler, *grooming*, *texturing and shading artist*
- Organic and Inorganic 3D modeler at Utopia Avatars at EGO W3RLD
- Development of 3D hard surface modeling for advertising campaigns at Kutuko Studio
- Development of organic modeling for advertising campaign at Nein Club
- Development of 3D modeling for interior design at Miltidesign
- Realization and coordination of the women's collective exhibition "Femenino plural"
- Image work for 2D animation "Naturaleza Encendida" at the Royal Botanical Garden of Madrid
- Degree in Fine Arts from the Complutense University of Madrid
- Master's Degree in Organic Modeling by Lightbox Academy

Ms. Cedrán Rojo, Alba

- Expert in 3D Animation and 3D Modeling
- Designer in the area of Audiovisual Social Responsibility "Web Documentaries".
- Graduate in Artistic Creation for Video Games and Applied Games by the University of Barcelona, ENTI-UB
- Master's Degree in 3D Character Animation with Maya by Animum Creativity Advanced School.
- Higher Technician in Art Direction and Audiovisuals by ITES Imagen y Sonido school in Barcelona.

Mr. Llorens Aguilar, Víctor

- Expert in 3D Modeling
- Teacher in courses related to 3D Modeling
- Scratch teacher in private schools
- Degree in 3D Animations, Games and Interactive Environments

Take the opportunity to learn about the latest advances in this field in order to apply it to your daily practice"

09

Certificate

The Master's Degree in 3D Texture Modeling guarantees students, in addition to the most rigorous and up-to-date education, access to a diploma for the 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 private qualification will allow you to obtain a **Master's Degree 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** 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: **Master's Degree in 3D Texture Modeling**

Modality: **online**

Duration: **12 months.**

Accreditation: **60 ECTS**


tech global university

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

Master's Degree in 3D Texture Modeling

This is a private qualification of 1,800 hours of duration equivalent to 60 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
Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates


Master's Degree in 3D Texture Modeling

General Structure of the Syllabus

Subject type	ECTS
Compulsory (CO)	60
Optional (OP)	0
External Work Placement (WP)	0
Master's Degree Thesis (MDT)	0
	Total 60

General Structure of the Syllabus

Year	Subject	ECTS	Type
1º	3D Modeling with 3DS Max	6	CO
1º	Advanced 3D Modeling with 3DS Max	6	CO
1º	3D Modeling with Blender	6	CO
1º	3D Modeling with ZBrush	6	CO
1º	Texturing	6	CO
1º	Substance Painter Texturing	6	CO
1º	Rendering	6	CO
1º	Rendering with VRay Engine in 3DS Max	6	CO
1º	Characters	6	CO
1º	Exports to Unreal	6	CO

Dr. Pedro Navarro Illana
Dean

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*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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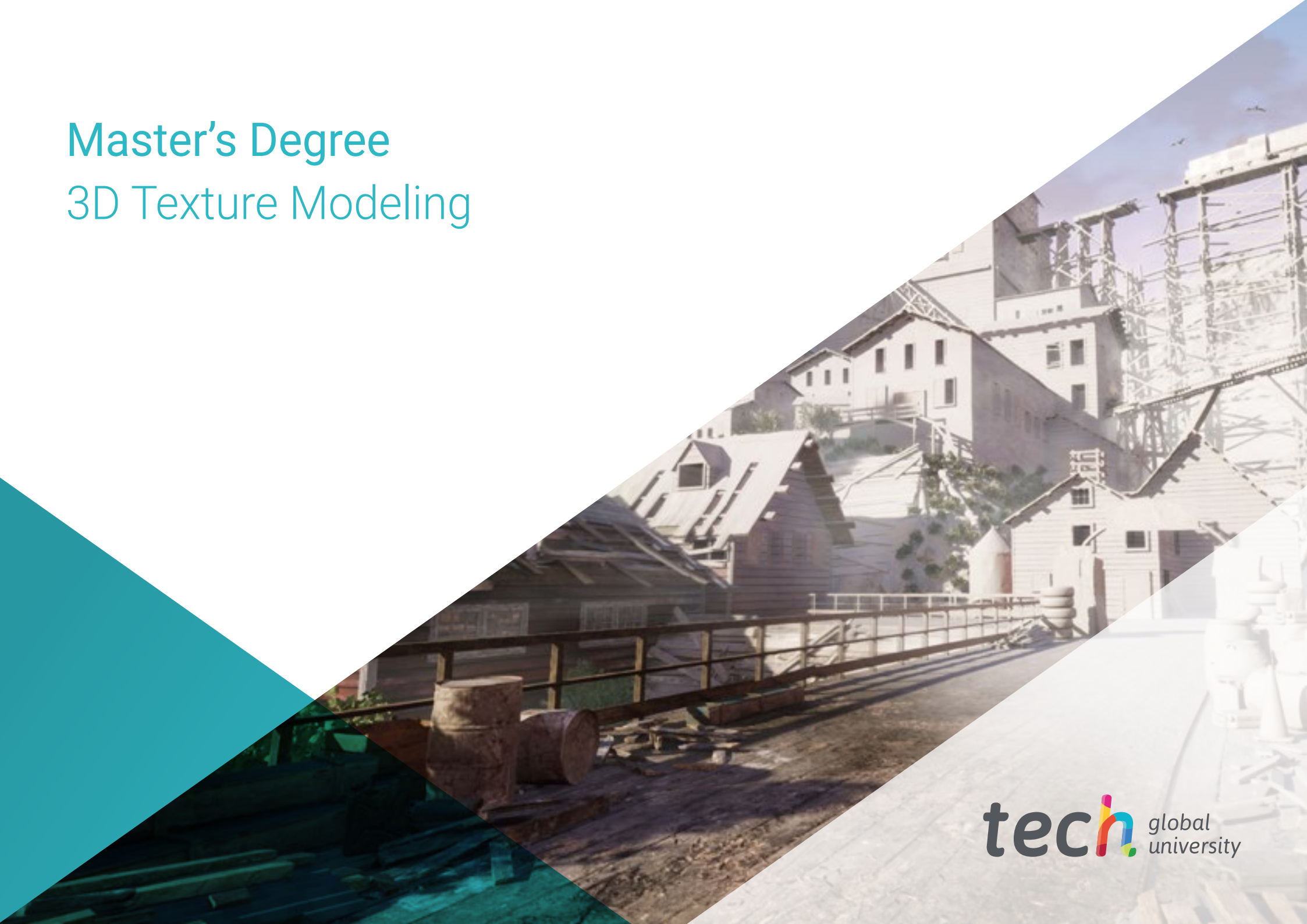
Master's Degree
3D Texture Modeling

- Modality: **Online**
- Duration: **12 months.**
- Certificate: **TECH Global University**
- Accreditation: **60 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Master's Degree
3D Texture Modeling



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