Advanced Master's Degree
Integral 3D Modeling

tech technological university

tech technological university

Advanced Master's Degree

Integral 3D Modeling

- Modality: **online**
- Duration: **2 years**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/pk/design/advanced-masters-degree/advanced-masters-degree-integral-3d-modeling

Index

01 Introduction p. 4

02 Objectives p. 8

03 Skills p. 16

04 Course Management p. 20

05 Structure and Content p. 24

06 Methodology p. 48

07 Certificate p. 56

01

Introduction

New modeling techniques allow the design of all types of characters, landscapes, figures and textures, and have become a fundamental element in many media environments. Thus, industries such as film, television or advertising cannot be understood today without 3D modeling. For this reason, specialists in this field have become highly sought-after figures by all types of companies. And this program, therefore, offers the professional the opportunity to delve into organic 3D Modeling, texture-focused 3D Modeling and hardsurface-oriented 3D Modeling, so that you can become an expert with all the integral knowledge of these disciplines, which will allow you to access important opportunities in film, video game or design companies

This program will allow you to work in the video game industry or in major film productions thanks to the innovative 3D modeling techniques that you will be able to incorporate into your daily work"

Today, the entertainment industry has reached billions of people. In any country, people of different ages and backgrounds enjoy a movie, a TV series or a video game. However, these audiovisual products have evolved significantly in recent years, driven by recent technological innovations. Thus, cinema has now been able to integrate all kinds of digital models, saving production costs and speeding up filming. Similarly, video games have evolved enormously thanks to new graphics engines capable of supporting highly detailed designs.

All these advances would not be possible without 3D Modeling professionals and the latest techniques in this area. This Advanced Master 's Degree has been designed with the aim of bringing the designer closer to the best 3D modeling tools, for which it has integrated in a single program the fundamental elements of organic modeling, texture modeling and hardsurface modeling. Therefore, this degree can mean a great progress for the professional, who will become a great expert in this field by having all the latest knowledge and procedures in this exciting and complex field.

In this way, you will be able to deepen in the use of utilities such as Substance Painter,Blender, 3DS Max, Unreal or Marmoset Toolbag. All this, focused on the different areas of 3D Modeling and with an eminently practical perspective. In addition, you will have the best online teaching methodology, which will adapt to your personal circumstances, allowing you to study when and where you want. Likewise, you will have at your disposal the best teaching staff, composed of active specialists who will provide you with the latest developments in this field, accompanied by the best multimedia materials.

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

- The development of case studies presented by experts in 3D Modeling
- The graphic, schematic, and eminently 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.
- Its special emphasis on innovative methodologies in design and 3D 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

Thanks to this Advanced Master's Degree, you will be able to delve into the use of tools such as Unreal, 3DS Max or Substance Painter"

3D Modeling offers tremendous career opportunities and, thanks to this program, you will be ready to work with the best companies in the world in sectors such as film"

TECH's online methodology adapts to your professional circumstances, since you can study when and where you want, without rigid schedules or uncomfortable commuting.

The best teaching staff is waiting for you to transmit the latest advances in 3D Modeling, preparing you to face the present and future challenges of this exciting field.

Its teaching staff includes professionals belonging to the field of 3D Modeling, who bring to this program the experience of their work, in addition to recognized specialists from prestigious reference societies and universities.

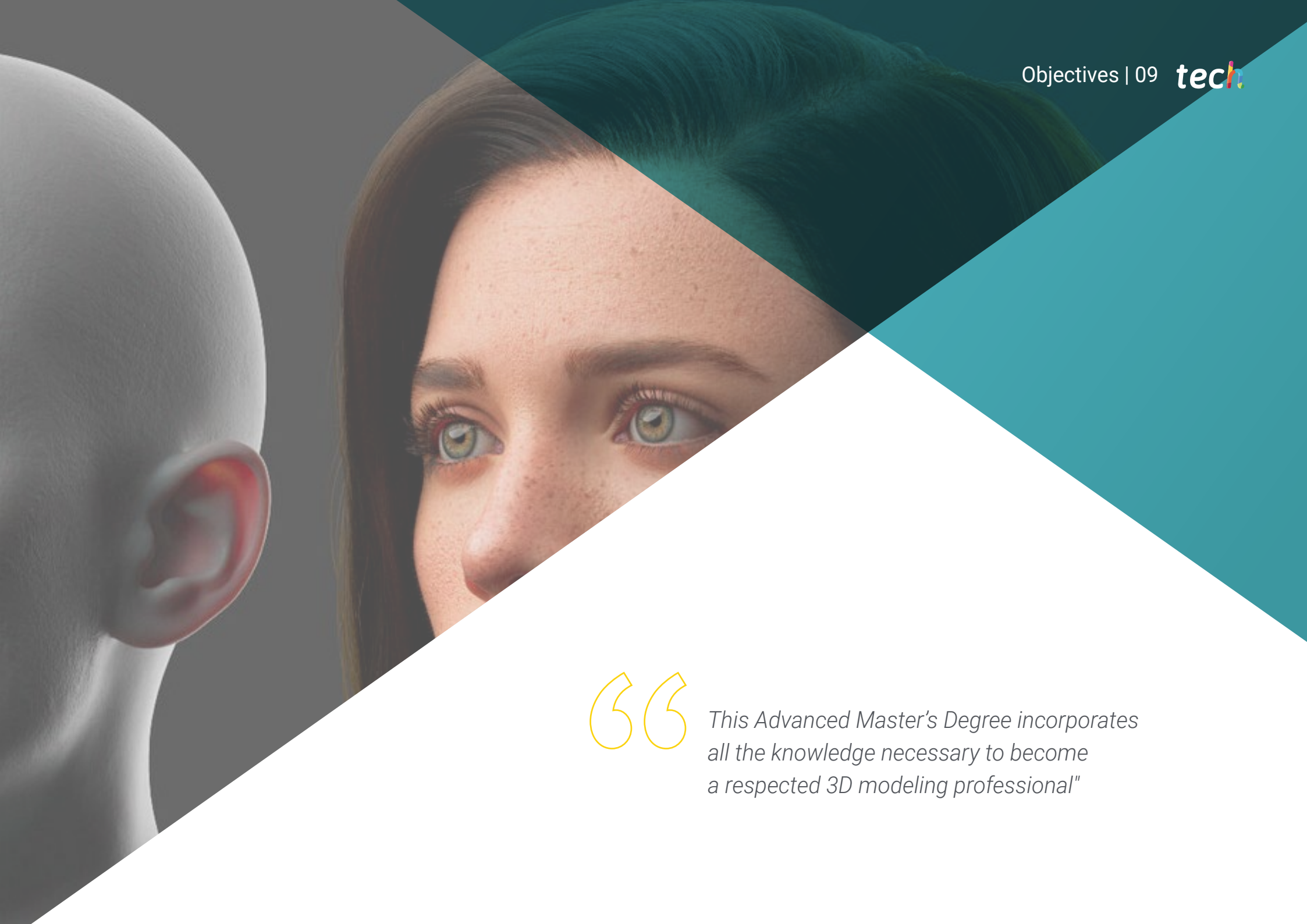
The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide an immersive training experience designed to train for real-life situations.

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

02

Objectives

The main objective of this program is to provide the professional with the best tools in 3D Modeling. To achieve this goal, TECH offers a 100% online learning system that adapts completely to the student, a teaching staff composed of prestigious specialists in this field and the most updated contents. The designer will be able to catch up quickly and easily, at their own pace, knowing that they have a great opportunity to advance their career.



This Advanced Master's Degree incorporates all the knowledge necessary to become a respected 3D modeling professional"

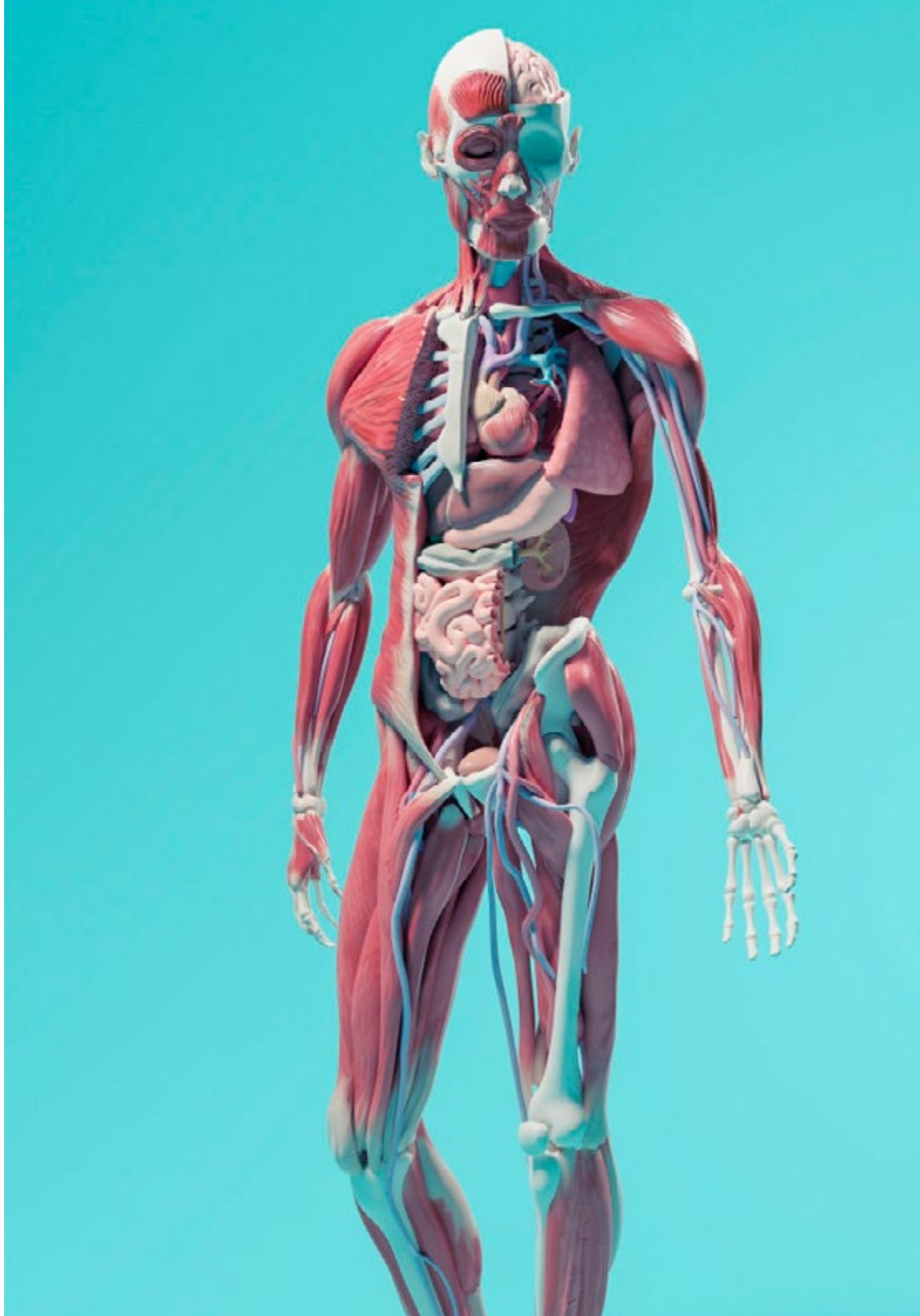
General Objectives

- Expand knowledge of human and animal anatomy in order to develop hyper-realistic creatures
- Mastering retopology, UV's and texturing to perfect the models created
- Create an optimal and dynamic workflow to work more efficiently with 3D Modeling
- Have the skills and knowledge most in demand in the 3D industry to be able to apply for the best jobs
- 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
- Know in depth the different types of Hard Surface modeling, the different concepts and characteristics to apply them in the 3D Modeling industry
- Deepen the theory of the creation of forms to develop Form Masters
- Learn in detail the basics of 3D modeling in its various forms
- Generate designs for different industries and their application
- Be a technical expert and/or Artist in hardsurface 3D Modeling
- Know all the tools related to the 3D modeling profession
- Acquire skills for the development of textures and FX of 3D models

Specific Objectives

- Investigate both male and female human anatomy
- Develope the highly detailed human body
- Hyper-realistic face sculpting
- Master the different professional sculpting techniques
- Create advanced full body and face retopology in Maya
- Deepen how to apply details using alphas and brushes inZbrush
- Study the most optimal form of UV's in Maya and UDIM systems
- Develop the knowledge to texture in Substance Painter for video games
- Knowledge of texturing in Mari for hyper-realistic models
- Learn how to create XYZ textures and Displacement maps on models
- Learn more about importing textures in Maya
- Discover advanced lighting and photography concepts to sell models more efficiently
- Develop the learning of model posing through different techniques
- Deepen in the development of a rig in Maya for the subsequent possible animation of the model
- Observe the control and use of the rendering of the model, bringing out all its details
- Delve into the advanced use of Xgen in Maya
- Create hair for movies
- Studying hair using Cards for video games
- Develop your own hair textures
- See the different use of hair brushes in ZBrush
- Study the use of Marvelous Designer
- Create fabric simulations in Marvelous Designer
- Practicing different types of complex patterns in Marvelous Designer
- Gain insight into the professional workflow from Marvelous to ZBrush
- Develop the texturing and shading of clothing and fabrics in Mari
- Focuse anatomical knowledge in simpler, cartoon-like forms
- Create a cartoon model from the base to the detail applying what has been learned previously
- Review the techniques learned in the course in a different modeling style
- Learning the modeling of different types of animal anatomy
- Review the different types of reptiles and how to create scales with Displacement and Alphas maps
- Investigate how to export models to Mari for realistic texturing
- Learn more about Grooming and how to Groom animals with Xgen
- Render models in Arnold Render in Maya

- Outstand software performance
- Transfer knowledge of Maya and ZBrush to Blender to create amazing models
- Delve into Blender's node system to create different shaders and materials
- Render the blender practice models with the two types of render engines Eevee and Cycles
- Study software functionality and project configuration
- Delve into the study of PST and the storytelling of the scene to achieve a good design for the environment
- Know the different terrain and organic element modeling techniques, as well as the implementation of the scanned models themselves
- Deepen in the vegetation creation system and how to control it perfectly in Unreal Engine
- Create different types of texturing of the parts of the project, as well as shading and materials with their corresponding settings
- Develop knowledge about the different types of lights, atmospheres, particles and fog, how to place different types of cameras and take captures to have the composition in different ways
- 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 one's own advantage
- Use 2D elements to combine with 3D to create shapes more efficiently



- 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
- 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
- Know in depth the Zbrush program, the most used in organic modeling in the market
- Optimizie 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
- 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
- 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
- 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 updated tools of the programs
- Know how to perform a basic rendering with other programs, such as IRay, Zbrush, Photoshop and Keyshot
- In-depth knowledge of the VRay engine assigned to the 3DS Max program
- Configure the rendering options to assign the desired rendering engine
- Learn about VRay's own materials and work with them through nodes
- Migrate textures created in Substance Painter to VRay engine
- Configue the VRay 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
- 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, and the environment
- Handle the Unreal Engine real time engine in a way that it performs perfectly when working with a 3D model and its textures
- Understanding the properties of Unreal materials
- Know how to work with and understand Unreal, material nodes, giving effects to textures to achieve unique materials
- Correctly lighting an Unrealscene 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
- Conceive and apply geometric figure constructions
- Understand the basics of three-dimensional geometry
- Know in detail how it is represented in the technical drawing
- Identify different mechanical components
- Apply transformations by means of symmetries
- Develop understandings of how shapes develop
- Work through shape analysis
- In-depth understanding of how to control the topology

- Develop communication of functions
- Have knowledge of the emergence of hard surface
- Know in detail the different industries of its application
- Have a broad knowledge of the different types of modeling
- Possess valid information on the areas that make up the modeling
- Broad understanding of how nurbs modeling software works
- Working with precision modeling systems
- Learn in detail how to execute commands
- Create the basis of the geometries
- Edit and transform geometries
- Work with an organization in the scenes
- Develop techniques for the resolution of specific cases
- Apply solutions to different types of requirements
- Know the main software tools
- Incorporate mechanical knowledge into modeling
- Work with analysis tools
- Develop strategies to address a model
- Deepen the application of techniques to advanced models
- Understand in detail how the component parts of an advanced model work
- Work with different parts of a complex model
- Acquire skills to order a complex model
- Identify how details fit together
- Possess extensive knowledge of the use of 3D Studio Max
- Work with customized configurations
- Understand in depth how smoothing works on meshes
- Conceive geometries through various methods
- Develop an understanding of how a mesh behaves
- Apply object transformation techniques
- Knowledge of the creation of UV maps
- Apply all the techniques for specific product development
- In-depth study of how the component parts are developed
- Broad understanding of the topology of an aircraft in modeling
- Apply knowledge of technical components
- Create complex shapes through the development of simple shapes
- Understand the physiognomy of a bot shape
- Work on the basis of basic shapes for mechanical models
- Develop the ability to decompose the elements
- Understand in depth how detail makes realism
- Solve different techniques to develop details
- Understand how mechanical parts are connected

03

Skills

This program has been specifically designed to provide the professional with the latest developments and techniques in 3D Modeling. Thus, this Advanced Master's Degree will delve into issues such as texturing with Allegorithmic Substance Painterand Mari, character styling with Substance Painter and Zbrush, 3D modeling with Graphite Tool, rendering with VRay engine in 3DS Max or technical modeling in Rhino, among many other issues. Thus, the professional will have all the necessary tools to model in different areas and with different approaches, preparing them to be an integral specialist in 3D Modeling.

This is the most complete 3D modeling program on the market, as it provides you with knowledge and techniques in three disciplines: organic modeling, texture modeling and hard surface modeling"

General Skills

- Create any kind of completely organic living being including its clothing and props, autonomously and with high quality
- Adapt to any type of workflow in the sector, using the most suitable one for each type of work
- Create the skeleton of a character using a rig to check functionality and correct bugs
- Use the best and most widespread software in the industry in the field of 3D Modeling and Sculpting
- 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
- Master the tools for the design of hard surfaces
- Apply the knowledge in an appropriate way to make 3D modeling
- Employ theory to create realistic shapes
- Generate new designs for any industry
- Be proficient in all the tools and programs of the profession

Specific Skills

- In-depth knowledge of the anatomy of the body, making the most of every detail
- Lay the artistic foundations to differentiate oneself from other designers
- Make great human models, both male and female
- Solve problems of other work departments
- Increase the professionalism of the student with transversal competences in rhetopology
- Understand the influence of a good topology at all production levels
- Master Mari software, which is widely used in the film industry
- Know the standard in video game texturing through Substance
- Deepen your understanding of the current demands of the film and videogame industry to offer the best possible design solutions
- Master rendering to avoid models that look bad or do not meet required standards
- Present models and design portfolios in a professional manner
- Refine the composition of light, shape, color and pose of the models to enhance the work
- Know and meet the demands in hair creation for film and video games
- Create hair mastering different artistic styles
- Master the Marvelous Designer tool and its complex patterns
- Create realistic or cartoon characters in a versatile and plausible manner
- Know the anatomy of all types of creatures in order to represent them accurately
- Master Unreal Engine and Blender more effectively than most designers
- 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
- Develop to the maximum the skills necessary to employ different modeling techniques
- Be able to create realistic surfaces using different polygonal modeling software
- Seamless use of two or more forms of editing depending on the modeling objective
- Perfectly master the Low Poly 3D Studio Max interface to simplify the mechanical components of any object
- Be able to perfectly use Hard Surface parameters to create characters with Sculpt modeling
- Be able to carry out a texturing project using different variations of PBR materials
- Extrapolate basic shapes to create realistic mechanical models

All the necessary skills to perform in today's design world will be within your reach with this Advanced Master's Degree"

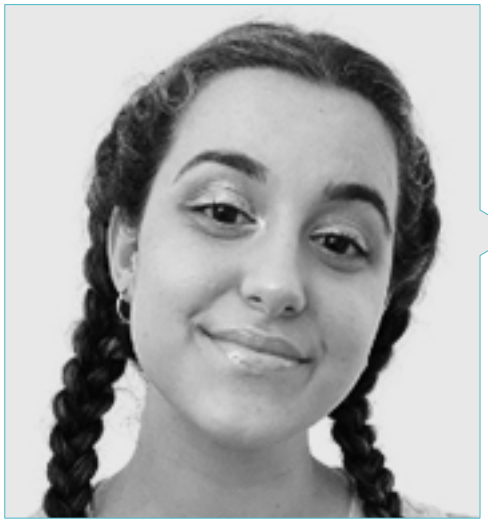
04

Course Management

To guide the entire learning process, TECH has selected a teaching staff composed of working professionals who are up to date with the latest innovations in 3D Modeling. Thus, these teachers will transfer all the knowledge the student needs to progress in this area of design, making them able to apply everything learned in this program directly to their work. Therefore, this Advanced Master's Degree is the best option to specialize in 3D Modeling, as it will prepare you specifically to access the best professional opportunities thanks to the support of its teachers.

The most prestigious teaching staff will now be at your fingertips to bring you up to date in 3D Modeling"

Management



Ms. Gómez Sanz, Carla

- 3D Generalist at Blue Pixel 3D
- Concept Artist, 3D Modeler, Shading at Timeless Games Inc
- Collaboration with multinational consulting firm for cartoon and animation design for commercial proposals
- Advanced Technician in 3D Animation, video games and interactive environments at CEV School of Communication, Image and Sound
- Master and Bachelor Degree in 3D Art, Animation and Visual Effects for videogames and cinema at CEV School of Communication, Image and Sound

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

Mr. Salvo Bustos, Gabriel Agustín

- Aeronautical 3D Modeling Experience
- 3D Artist at 3D VISUALIZATION SERVICE INC
- 3D production for Boston Whaler
- 3D Modeling for Shay Bonder Multimedia TV Production Company
- Audiovisual Producer in Digital Film
- Product Designer for Escencia de los Artesanos by Eliana M
- Industrial Designer Specializing in Products. National University of Cuyo
- Mendoza Late Contest Honorable Mention
- Exhibitor in Regional Visual Arts Salon Vendimia
- Digital Composition Seminar National University of Cuyo

05

Structure and Content

The contents of this Advanced Master's Degree have been carefully elaborated by internationally renowned experts. These experts have ensured that the professional has access to the best knowledge in this field, since this program incorporates the latest developments in aspects such as the principles of Hard Surface modeling, advanced modeling in Rhino, retopology and Maya modeling or UV preparation for UDIM systems focused on large production models, among many others.

There is no program more complete and up-to-date than this one to learn more about the latest developments in 3D Modeling"

Module 1. Anatomy

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

1.2. Anatomical Differences Between Genders and Sizes
- 1.2.1. Shapes Applied to Characters
- 1.2.2. Curves and Straight Lines
- 1.2.3. Bone, Muscle and Skin Behavior

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

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

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

1.6. Hand Sculpting
- 1.6.1. Hand Bones
- 1.6.2. Muscles and Tendons of the Hand
- 1.6.3. Skin and Wrinkles on the Hands

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

1.8. Feet
- 1.8.1. Bone Construction for the Foot
- 1.8.2. Muscles and Tendons of the Foot
- 1.8.3. Skin and Wrinkles on the Feet

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

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

Module 2. Retopology and Maya Modeling

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

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

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

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

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

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

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

2.8. Advanced Creation for the Eyes in Maya
- 2.8.1. Creation of the Spheres: Sclera, Cornea and Iris
- 2.8.2. Lattice Tools
- 2.8.3. Displacement Map From ZBrush

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

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

Module 3. UV's and Texturing with AllegorithmicSubstance Painter and Mari

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

3.2. UV Preparation for UDIM Systems Focused on High Throughput Models
- 3.2.1. UDIM
- 3.2.2. UDIM in Maya
- 3.2.3. UV Preparation for UDIM Systems Focused on Large-Scale Production Models

3.3. XYZ Textures What are They and How to Use Them?
- 3.3.1. XYZ Hyperrealism
- 3.3.2. MultiChannel Maps
- 3.3.3. Texture Maps

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

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

3.6. Finalize Our Textures of Substance Painter
- 3.6.1. Scattering, Translucency
- 3.6.2. Model Texturing
- 3.6.3. Scars, Freckles, Tattoos, Paints or Makeup

3.7. Hyper-realistic Facial Texturing with XYZ Textures and Color Mapping
- 3.7.1. XYZ Textures in Zbrush
- 3.7.2. Wrap
- 3.7.3. Error Correction

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

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

3.10. Shadingand Implementation of Textures in Maya
- 3.10.1. Skin Shaders in Arnold
- 3.10.2. Hyperrealistic Eye
- 3.10.3. Touch-ups and Tips

Module 4. Rendering, Lighting and Model Posing

4.1. Character Posing in ZBrush
- 4.1.1. Rig in ZBrush with ZSpheres
- 4.1.2. Transpose Master
- 4.1.3. Professional Finish

4.2. Rigging and Heavy from Our Own Skeleton in Maya
- 4.2.1. Rig in Maya
- 4.2.2. Rigging Tools with Advance Skeleton
- 4.2.3. Rig Weighing

4.3. Blend Shapes to Give Life to Your Character's Face
- 4.3.1. Facial Expressions
- 4.3.2. Maya Blend shapes
- 4.3.3. Animation with Maya

4.4. Mixamo, a Quick Way to Present Our Model
- 4.4.1. Mixamo
- 4.4.2. Mixamo Rigs
- 4.4.3. Animations

4.5. Lighting Concepts
- 4.5.1. Lighting Techniques
- 4.5.2. Light and Color
- 4.5.3. Shadows

4.6. Lights and Parameters of Arnold Render
- 4.6.1. Lights with Arnold and Maya
- 4.6.2. Control and Parameters of Lights
- 4.6.3. Arnold Parameters and Configuration

4.7. Lighting of Our Models in Maya with Arnold Render
- 4.7.1. Lighting Set up
- 4.7.2. Model Lighting
- 4.7.3. Light and Color Mix

4.8. Going Deeper into Arnold: Denoising and the Different AOV's
- 4.8.1. AOV´s
- 4.8.2. Advanced Noise Treatment
- 4.8.3. Denoiser

4.9. Postproduction of Render in Photoshop
- 4.9.1. Image Treatment
- 4.9.2. Photoshop: Levels and Contrasts
- 4.9.3. Layers: Characteristics and Their Effects

Module 5. Hair Creation for Video Games and Movies

5.1. Differences Between Hair for Videogames and the Cinema
- 5.1.1. FiberMesh and Cards
- 5.1.2. Tools for the Creation of Hair
- 5.1.3. Hair Softwares

5.2. Hair Sculpting in Zbrush
- 5.2.1. Base Forms for Hairstyles
- 5.2.2. Creation of Zbrush Brushes in Zbrush for Hair
- 5.2.3. Curve Brushes

5.3. Hair Creation in Xgen
- 5.3.1. Xgen
- 5.3.2. Collections and Descriptions
- 5.3.3. Hair Vs. Grooming

5.4. Xgen Modifiers: Giving Realism to the Hair
- 5.4.1. Clumping
- 5.4.2. Coil
- 5.4.3. Hair Guidelines

5.5. Color and Region Maps: for Absolute Hair and Hair Control
- 5.5.1. Hair Region Maps
- 5.5.2. Cuts: Curly, Shaved and Long Hair
- 5.5.3. Micro Detail: Facial Hair

5.6. Xgen Advanced: Use of Expressions and Refinement
- 5.6.1. Expressions
- 5.6.2. Utilities
- 5.6.3. Hair Refinement

5.7. Placement of Cards in Maya for Videogame Modeling
- 5.7.1. Fibers in Cards
- 5.7.2. Cards by Hand
- 5.7.3. Cards and Real-time Motor

5.8. Optimization for Movies
- 5.8.1. Optimization for Hair and its Geometries
- 5.8.2. Preparation for Physics with Movements
- 5.8.3. Xgen Brushes

5.9. Hair Shading
- 5.9.1. Arnold's Shader
- 5.9.2. Hyper-Realistic Look
- 5.9.3. Hair Treatment

5.10. Render
- 5.10.1. Render When Using Xgen
- 5.10.2. Lighting
- 5.10.3. Eliminating Noise

Module 6. Clothing Simulation

6.1. Importing Your Model into Marvelous Designer and Program Interface
- 6.1.1. Marvelous Designer
- 6.1.2. Software Functionality
- 6.1.3. Real-Time Simulations

6.2. Creation of Simple Patterns and Clothing Accessories
- 6.2.1. Creations: T-shirts, Accessories, Hats and Pockets
- 6.2.2. Fabric
- 6.2.3. Patterns, Zips and Seams

6.3. Creating Advanced Clothing: Complex Patterns
- 6.3.1. Pattern Complexity
- 6.3.2. Physical Qualities of Fabrics
- 6.3.3. Complex Accesories

6.4. Marvelous Clothing Simulation
- 6.4.1. Animated Models in Marvelous
- 6.4.2. Fabric Optimization
- 6.4.3. Model Preparation

6.5. Export of Clothing from Marvelous Designer to ZBrush
- 6.5.1. Low Poly in Maya
- 6.5.2. UV in Maya
- 6.5.3. Zbursh, Use of Reconstruct Subdiv

6.6. Refinement of Clothing
- 6.6.1. Workflow
- 6.6.2. Zbrush Details
- 6.6.3. Clothing Brushes in Zbrush

6.7. We Will Improve Our Simulation with ZBrush
- 6.7.1. From Tris to Quads
- 6.7.2. Maintenance of UV´s
- 6.7.3. Final Sculpting

6.8. High Detail Clothing Texturing in Mari
- 6.8.1. Tileable Textures and Fabric Materials
- 6.8.2. Baking
- 6.8.3. Texturing in Mari

6.9. Fabric Shading in Maya
- 6.9.1. Shading
- 6.9.2. Textures Created in Mari
- 6.9.3. Realism with Arnold's Shaders

6.10. Render
- 6.10.1. Clothing Rendering
- 6.10.2. Lighting in Clothing
- 6.10.3. Texture Intensity

Module 7. Stylized Characters

7.1. Choice of a Stylized Character and Blocking of Base Forms
- 7.1.1. References and Concept Arts
- 7.1.2. Base Forms
- 7.1.3. Deformities and Fantastic Shapes

7.2. Conversion of Our Low Poly into High Poly Model: Head, Hair and Face Sculpting
- 7.2.1. Head Blocking
- 7.2.2. New Techniques to Create Hair
- 7.2.3. Making Improvements

7.3. Model Refinement: Hands and Feet
- 7.3.1. Advanced Sculpting
- 7.3.2. General Shape Refinement
- 7.3.3. Cleaning and Smoothing of Shapes

7.4. Creating the Jaw and Teeth
- 7.4.1. Creating Human Teeth
- 7.4.2. Increase Its Polygons
- 7.4.3. Fine Details in Zbrush Teeth

7.5. Modeling Clothing and Accessories
- 7.5.1. Cartoon Types of Clothing
- 7.5.2. Zmodeler
- 7.5.3. Applied Maya Modeling

7.6. Retopology and Clean Topology Creation from Scratch
- 7.6.1. Retopology
- 7.6.2. Loops According to the Model
- 7.6.3. Mesh Optimization

7.7. UV Mapping & Baking
- 7.7.1. UV's
- 7.7.2. Substance Painter: Baking
- 7.7.3. Polish Baking

7.8. Texturing & Painting In Substance Painter
- 7.8.1. Substance Painter: Texturing
- 7.8.2. Techniques of Handpainted Cartoon
- 7.8.3. Fill Layers with Generators and Masks

7.9. Lighting and Render
- 7.9.1. Lighting of Our Character
- 7.9.2. Color Theory and Presentation
- 7.9.3. Substance Painter: Render

7.10. Posing and Final Presentation
- 7.10.1. Diorama
- 7.10.2. Posing Techniques
- 7.10.3. Model Presentation

Module 8. Creature Modeling

8.1. Understanding Animal Anatomy
- 8.1.1. Study of Bones
- 8.1.2. Animal Head Proportions
- 8.1.3. Anatomic Differences.

8.2. Skull Anatomy
- 8.2.1. Animal Face
- 8.2.2. Head Muscles
- 8.2.3. Skin Layer, Over Bones and Muscles

8.3. Anatomy of the Spine and Thoracic Cage
- 8.3.1. Animal Torso and Hip Musculature
- 8.3.2. Central Axis of the Body
- 8.3.3. Torso Creation in Different Animals

8.4. Animal Musculature
- 8.4.1. Muscles
- 8.4.2. Synergy Between Muscle and Bone
- 8.4.3. Shapes of an Animal Body

8.5. Reptiles and Amphibians
- 8.5.1. Reptilian Skin
- 8.5.2. Small Bones and Ligaments
- 8.5.3. Fine Detail

8.6. Mammals
- 8.6.1. Fur
- 8.6.2. Bigger and Stronger Bones and Ligaments
- 8.6.3. Fine Detail

8.7. Animals with Feathers
- 8.7.1. Plumage
- 8.7.2. Elastic and Light Bones and Ligaments
- 8.7.3. Fine Detail

8.8. Analysis of the Jaw and Creation of Teeth
- 8.8.1. Animal Specific Teeth
- 8.8.2. Detailing of Teeth
- 8.8.3. Teeth in the Jaw Cavity

8.9. Fur Creation for Animals
- 8.9.1. Xgen in Maya: Grooming
- 8.9.2. Xgen: Feathers
- 8.9.3. Render

8.10. Fantastic Animals
- 8.10.1. Fantastic Animal
- 8.10.2. Complete Animal Modeling
- 8.10.3. Texturing, Lighting and Rendering

Module 9. Blender: a New Twist in the Industry

9.1. Blender Vs. Zbrush
- 9.1.1. Advantages and Differences
- 9.1.2. Blender and the 3D Art Industry
- 9.1.3. Advantages and Disadvantages of Free Software

9.2. Blender Interface and Program Knowledge
- 9.2.1. Interface
- 9.2.2. Customization
- 9.2.3. Experimentation

9.3. Head Sculpting and Transpolation of Controls from ZBrush to Blender
- 9.3.1. Human Face
- 9.3.2. 3D Sculpting
- 9.3.3. Blender Brushes

9.4. Full Body Sculpting
- 9.4.1. Human Body
- 9.4.2. Advanced Techniques
- 9.4.3. Details and Refinement

9.5. Retopology and UV in Blender
- 9.5.1. Retopology
- 9.5.2. UV
- 9.5.3. Blender UDIM's

9.6. From Maya to Blender
- 9.6.1. Hard Surface
- 9.6.2. Modifiers
- 9.6.3. Keyboard Shortcuts

9.7. Blender Tips and Tricks
- 9.7.1. Range of Possibilities
- 9.7.2. Geometry Nodes
- 9.7.3. Workflow

9.8. Blender Nodes: Shading and Texture Placement
- 9.8.1. Nodal System
- 9.8.2. Shaders Through Nodes
- 9.8.3. Textures and Materials

9.9. Rendering in Blender with Cycles and Eevee
- 9.9.1. Cycles
- 9.9.2. Eevee
- 9.9.3. Lighting

9.10. Implementation of Blender in Our Workflow as Artists
- 9.10.1. Implementation in the Workflow
- 9.10.2. Search for Quality
- 9.10.3. Types of Exports

Module 10. Creation of Organic Environments in Unreal Engine

10.1. Configuration of Unreal Engine and Project Organization
- 10.1.1. Interface and Organization
- 10.1.2. Organization of Folders
- 10.1.3. Search for Ideas and References

10.2. Blocking an Environment in Unreal Engine
- 10.2.1. PST: Primary, Secondary and Tertiary Elements
- 10.2.2. Scene Design
- 10.2.3. Storytelling

10.3. Terrain Modeling: Unreal Engine and Maya
- 10.3.1. Unreal Terrain
- 10.3.2. Terrain Sculpting
- 10.3.3. Heightmaps: Maya

10.4. Modeling Techniques
- 10.4.1. Rocks Sculpting
- 10.4.2. Brushes for Rocks
- 10.4.3. Cliffs and Optimization

10.5. Creation of Vegetation
- 10.5.1. Speedtree Software
- 10.5.2. Low Poly Vegetation
- 10.5.3. Unreal's Foliage System

10.6. Texturing in Substance Painter and Mari
- 10.6.1. Stylized Terrain
- 10.6.2. Hyper-Realistic Texturing
- 10.6.3. Tips and Guidelines

10.7. Photogrammetry
- 10.7.1. Megascan Library
- 10.7.2. Agisoft Metashape Software
- 10.7.3. Model Optimization

10.8. Shading and Materials in Unreal Engine
- 10.8.1. Texture Blending
- 10.8.2. Material Configuration
- 10.8.3. Final Touches

10.9. Lighting and Postproduction of Our Environment in Unreal Engine
- 10.9.1. Scene Look
- 10.9.2. Types of Lights and Atmospheres
- 10.9.3. Particles and Fog

10.10. Cinematic Render
- 10.10.1. Camera Techniques
- 10.10.2. Video and Screen Capture
- 10.10.3. Presentation and Final Finishing

Module 11. 3D Modeling with 3DS Max

11.1. 3D Modeling with 3DS Max
- 11.1.1. Orbit, Scopes and Views
- 11.1.2. Geometry Display Modes
- 11.1.3. Steering Wheels

11.2. Transformations and Geometry
- 11.2.1. Interactive and Parametric Transformations
- 11.2.2. Standard and Extended Primitives
- 11.2.3. Scaling Transformation
- 11.2.4. Select and Place / Select and Rotate
- 11.2.5. Alignment and Symmetry

11.3. Main Operations
- 11.3.1. Duplicate, Interactive Selection and Selection Groups and Elements
- 11.3.2. Layers, Grid, Snap y Pivot Point
- 11.3.3. Links, Coordinate Systems, Actions, Views and Isolate Geometry

11.4. Parametric Modifiers
- 11.4.1. Bend, Taper, Skew and Twist
- 11.4.2. Stretch and Squeeze
- 11.4.3. Ripple, Wave and Noise
- 11.4.4. Spherify, Lattice and Mirror
- 11.4.5. Push and Relax
- 11.4.6. Slice, Shell and Cap Holes

11.5. Free Deformation Modifiers
- 11.5.1. FFD Modifiers
- 11.5.2. FFD Cyl
- 11.5.3. FFD Box

11.6. Composition Objects
- 11.6.1. Boolean Operations Boolean and ProBoolean
- 11.6.2. Object Dispersion Scatter
- 11.6.3. Morphism Morph

11.7. 2D Shapes Splines
- 11.7.1. Splines and Its Options
- 11.7.2. The Vertex Line and Types
- 11.7.3. Sub-object Vertex, Segment and Splines

11.8. 2D Shapes Advanced Splines
- 11.8.1. Editable Spline and Use of Grid and Snap to Create 2D Shapes
- 11.8.2. Parametric Modifiers, FFD and Booleans with Splines
- 11.8.3. Extended Splines and Section

11.9. Spline Modifiers
- 11.9.1. Extrude
- 11.9.2. Bevel
- 11.9.3. Sweep
- 11.9.4. Lathe

11.10. Composition Objects Splines
- 11.10.1. Loft
- 11.10.2. Terrain
- 11.10.3. Sharpe Merge

Module 12. 3D Modeling with Advanced 3DS Max

12.1. Mesh Editing Polygonal Edition
- 12.1.1. Polygonal Edition Editable Poly and Edit Poly
- 12.1.2. Panels, Selection and Flexible Selection
- 12.1.3. TurboSmooth Modifier, MeshSmooth and HSDS

12.2. Mesh Editing Geometry
- 12.2.1. Vertex, Edge and Edge Editing
- 12.2.2. Polygon, Element and Geometry Editing
- 12.2.3. Geometry Cutting Planes and Added Resolution

12.3. Mesh Editing Selection Groups
- 12.3.1. Geometry Alignment and Visibility
- 12.3.2. Selection Sub-odjects, Material IDs and Smoothing Groups
- 12.3.3. Surface Subdivision and Vertex Painting

12.4. Mesh Editing Surface
- 12.4.1. Geometry Offset and Deformation Brush
- 12.4.2. Flat Mode and EditableMesh
- 12.4.3. Splines + Surface

12.5. Advanced Mesh Editing
- 12.5.1. EditablePatch
- 12.5.2. Model Sheet and Setup for Modeling
- 12.5.3. Symmetry Tracing and Symmetry

12.6. User Personalization
- 12.6.1. Display Floater and Panel Display Tool
- 12.6.2. Object Properties and Preferences
- 12.6.3. IU Personalization ShortCuts, Menus and Colors
- 12.6.4. Visor Configuration

12.7. Object Distribution
- 12.7.1. Spelling View
- 12.7.2. Spacing Tool and SnapShot
- 12.7.3. Cloning and Alignment Tool
- 12.7.4. Matrixes Array

12.8. Geometric Operations
- 12.8.1. Polygonal and Parametric Combination
- 12.8.2. Polygonal and Shape Combination
- 12.8.3. Polygonal and Boolean Combination
- 12.8.4. Polygonal, Spline, Parametric and Boolean Combining

12.9. Other Tools
- 12.9.1. Loops, Constraints and Edge Splitting
- 12.9.2. Isoline and Colapsar Modifiers
- 12.9.3. Polygon Counter and Optimization Types

12.10. Plugins and Scripts
- 12.10.1. Plugins and Scripts Grass-O-Matic
- 12.10.2. Creation of Grasses and Fibers with Grass-O-Matic
- 12.10.3. Greeble Plugin
- 12.10.4. Voronoi Script Fracture

Module 13. 3D Modeling with Graphite Tool

13.1. Interface
- 13.1.1. Functionality
- 13.1.2. Enable the Tool
- 13.1.3. Interface

13.2. Sub-objects and Selection
- 13.2.1. Sub-objects
- 13.2.2. Modify Topology
- 13.2.3. Modify Selection

13.3. Editing
- 13.3.1. Swift Loop
- 13.3.2. Paint Connect
- 13.3.3. Constraints

13.4. Geometry
- 13.4.1. Relax
- 13.4.2. Attach and Detach
- 13.4.3. Create and Collapse
- 13.4.4. Quadrify and Slice

13.5. Tools Similar to Polygon Mode
- 13.5.1. Polygons
- 13.5.2. Loops
- 13.5.3. Tris
- 13.5.4. Subdivision
- 13.5.5. Visibility
- 13.5.6. Align
- 13.5.7. Smoothing and Hardening

13.6. PolyDraw 1
- 13.6.1. Drag and Conform
- 13.6.2. Step Build Over the Grid
- 13.6.3. Step Build Over a Surface

13.7. PolyDraw 2
- 13.7.1. Shapes and Topology
- 13.7.2. Splines and Strips
- 13.7.3. Surface and Branches

13.8. Paint Deform
- 13.8.1. Shift Brush and Its Options
- 13.8.2. Push/Pull Brush and Its Options
- 13.8.3. Mirror and Other Options

13.9. Selection
- 13.9.1. Closed and Open Selections and Saving Selections
- 13.9.2. Select by Surfaces, Normals, Perspective or Random Parameters
- 13.9.3. Select by Vertex, Distance, Symmetry or Color

13.10. Painting with Objects
- 13.10.1. Object Catalogue
- 13.10.2. Brush Options
- 13.10.3. Functionality

Module 14. 3D Modeling with ZBrush

14.1. ZBrush
- 14.1.1. Interface and Basic Controls
- 14.1.2. Subtools, Symmetry, Transpose and Deformation
- 14.1.3. Brushes and Alphas

14.2. Main Tools
- 14.2.1. Masks and Polygroups
- 14.2.2. Subdivisions, Dynamesh and ZRemesher
- 14.2.3. Modify Topology, Matcaps and BPR

14.3. Modification Tools
- 14.3.1. Insert Multi Mesh
- 14.3.2. Layers and Morph Target
- 14.3.3. Projections and Extract

14.4. Advanced Tools
- 14.4.1. Crease and Bevel
- 14.4.2. Surface and Shadowbox
- 14.4.3. Decimation Master

14.5. ZSpheres and Adaptive Skin
- 14.5.1. Zspheres Controls
- 14.5.2. ZSketch
- 14.5.3. Adaptive Skin

14.6. Dynamesh and Advanced Zremesher
- 14.6.1. Boolean
- 14.6.2. Brushes
- 14.6.3. Zremesher Using Guides

14.7. Curve Brushes
- 14.7.1. Controls and Modifiers
- 14.7.2. Curve Surface and Other Brushes
- 14.7.3. Brush Creation with Curve

14.8. Hard Surface
- 14.8.1. Segments with Masks
- 14.8.2. Polygroupit
- 14.8.3. Panel loops
- 14.8.4. ZModeler
- 14.8.5. Primitives

14.9. Modifiers
- 14.9.1. Extender and Multi Slice
- 14.9.2. Deformer and Blend Twist
- 14.9.3. Taper and Flatten
- 14.9.4. Bend Arc and Bend Curve

14.10. Transpose Master
- 14.10.1. Posing a Character with Transpose Master
- 14.10.2. Correct Details
- 14.10.3. Prepare Character for Rendering

Module 15. Texturing

15.1. Texturing
- 15.1.1. Baking
- 15.1.2. PBR Physycally Based Rendering
- 15.1.3. Basic and Compound Texturing
- 15.1.4. Tileable Textures

15.2. Mapping Coordinates University of Valencia
- 15.2.1. Unwrap and Seams
- 15.2.2. UVWs Editor
- 15.2.3. Editor Options

15.3. Object ID
- 15.3.1. ID Assignment and Functionality
- 15.3.2. Multisubject Material
- 15.3.3. Application of Materials as Instances

15.4. High Poly and Baking of Normals in 3DS Max
- 15.4.1. High Poly and Low Poly
- 15.4.2. Projection Settings for Normal Map Baking
- 15.4.3. Normal MapTexture Baking
- 15.4.4. Normal MapSettings

15.5. Other Material Baking in 3DS Max
- 15.5.1. Fuzzy Map Application and Baking
- 15.5.2. Compound Materials
- 15.5.3. Mask Settings

15.6. Retopology in 3DS Max
- 15.6.1. Retopology Tools
- 15.6.2. Retopology with Graphite Tool
- 15.6.3. Retopology Settings

15.7. Texturing with 3DS Max
- 15.7.1. Material Properties
- 15.7.2. Texture Baking
- 15.7.3. Textural Toasting Complete Map, Normal Map and AO Map

15.8. Texturing with Photoshop
- 15.8.1. Coordinate Template
- 15.8.2. Adding Details in Photoshop and Reimporting Template with Textures
- 15.8.3. Tile a Texture
- 15.8.4. Create Normal Map

15.9. Coordinates and Maping with ZBrush
- 15.9.1. UV Master
- 15.9.2. Control Painting
- 15.9.3. Unwrap and Flatten

15.10. Texturing with ZBrush
- 15.10.1. Paint Mode
- 15.10.2. Noise Maker
- 15.10.3. Image Projection

Module 16. Texturing with Substance Painter

16.1. Substance Painter
- 16.1.1. Create New Projects and Reimport Models
- 16.1.2. Basic Controls and Interface 2D and 3D Views
- 16.1.3. Bakes

16.2. Baking Layers
- 16.2.1. World Space Normal
- 16.2.2. Ambient Occlusion
- 16.2.3. Curvature
- 16.2.4. Position
- 16.2.5. ID, Normal, Thickness

16.3. Layers
- 16.3.1. Base Color
- 16.3.2. Roughness
- 16.3.3. Metallic
- 16.3.4. Material

16.4. Masks and Generators
- 16.4.1. Layers and UVs
- 16.4.2. Masks
- 16.4.3. Procedural Generators

16.5. Material Base
- 16.5.1. Types of Materials
- 16.5.2. Customized Generators
- 16.5.3. Creation of a Base Material from Scratch

16.6. Brushes
- 16.6.1. Predefined Parameters and Brushes
- 16.6.2. Alphas, Lazy Mouseand Symmetry
- 16.6.3. Create Customized Brushes and Save Them

16.7. Particles
- 16.7.1. Particle Brushes
- 16.7.2. Properties of Particles
- 16.7.3. Particles Using Masks

16.8. Projections
- 16.8.1. Prepare Textures
- 16.8.2. Stencil
- 16.8.3. Cloning

16.9. Substance Share/Source
- 16.9.1. Substance Share
- 16.9.2. Substance Source
- 16.9.3. Textures.com

16.10. Terminology
- 16.10.1. Normal Map
- 16.10.2. Padding or Bleed
- 16.10.3. Mipmapping

Module 17. Rendering

17.1. Marmoset Toolbag
- 17.1.1. Geometry Preparation and FBX Format
- 17.1.2. Basic Concepts Importance of Geometry
- 17.1.3. Links and Materials

17.2. Marmoset Toolbag Sky
- 17.2.1. Environment
- 17.2.2. Light Poitns
- 17.2.3. Lights Outside the Sky

17.3. Marmoset Toolbag Details
- 17.3.1. Shadow and Pose
- 17.3.2. Procedural Materials
- 17.3.3. Channels and Reflection

17.4. Real-Time Rendering with Marmoset Toolbag
- 17.4.1. Image Export with Transparency
- 17.4.2. Interactive Export Marmoset Viewer
- 17.4.3. Film Export

17.5. Marmoset Toolbag Animated Cameras
- 17.5.1. Model Preparation
- 17.5.2. Camera
- 17.5.3. Main Camera Interactive Animation

17.6. Marmoset Toolbag Advanced Animated Cameras
- 17.6.1. Add New Cameras
- 17.6.2. Parametric Animation
- 17.6.3. Final Details

17.7. Marmoset Toolbag 4. Raytrace
- 17.7.1. Subsurface
- 17.7.2. Ray Tracing
- 17.7.3. Add Cameras and Map Rendering

17.8. Rendering with Substance Painter IRay
- 17.8.1. Iray Configuration
- 17.8.2. Viewer Settings
- 17.8.3. Display Settings

17.9. Rendering with ZBrush
- 17.9.1. Material Configuration
- 17.9.2. BPR Render and Lights
- 17.9.3. BPR Masks and Final Rendering in Photoshop

17.10. Rendering with Keyshot
- 17.10.1. From Zbrush to Keyshot
- 17.10.2. Materials and Lighting
- 17.10.3. Composition in Photoshop and Final Image

Module 18. Rendering with VRay Engine in 3DS Max

18.1. VRay Render Engine Assignment
- 18.1.1. Preparation of the Render Space
- 18.1.2. Render Setup Options and Assign Render
- 18.1.3. Optimize Render time

18.2. Lighting and Light Creation
- 18.2.1. 3-Point Lighting
- 18.2.2. Light Configuration
- 18.2.3. Render Region

18.3. Creation and Application of Materials
- 18.3.1. Vray Materials
- 18.3.2. VRay Material Configuration
- 18.3.3. Self-Illumination

18.4. From Substance Painter to VRay
- 18.4.1. Connect Nodes and Material Settings
- 18.4.2. Export Presets
- 18.4.3. Configure Smart Material in VRay

18.5. Details and Positioning in the Scene
- 18.5.1. Applying Shadows According to Model Position
- 18.5.2. Adjust Model and Silhouette
- 18.5.3. Metalic Base

18.6. Rounding Surfaces
- 18.6.1. VRayEdgeTex
- 18.6.2. Functionality and Configuration
- 18.6.3. Rendering with and without Rounding

18.7. Field of Vision
- 18.7.1. Camera and Shot
- 18.7.2. Camera Opening
- 18.7.3. Field of Vision

18.8. Ambient Occlusion and Global Illumination
- 18.8.1. GI and Render Elements
- 18.8.2. VRayExtraTex and VrayDirt
- 18.8.3. Global Illumination Multiplier

18.9. Rendering of a Still Frame
- 18.9.1. Adjust Render Values
- 18.9.2. Save Final Rendering
- 18.9.3. Composition of Ambient Occlusion

18.10. Rendering of a Sequence
- 18.10.1. Camera Animation
- 18.10.2. Rendering Options for Sequence
- 18.10.3. Frame Assembly for the Sequence

Module 19. Characters

19.1. Types of Characters
- 19.1.1. Realistic and Cartoon/Stylized
- 19.1.2. Humanoids and Creatures
- 19.1.3. Anatomy and Proportions

19.2. Tips to Work with ZBrush
- 19.2.1. Work with Reference and Transparencies Fitting and Transformation from 2D to 3D
- 19.2.2. Joining Parts with Dynamesh Working in Pieces or in Conjunction with Polygroups and ZRemesher
- 19.2.3. Lazy Mouse and GoZ

19.3. Sculpting a Head in ZBrush
- 19.3.1. Primary Shapes and Proportions
- 19.3.2. Eyelids and Eyes
- 19.3.3. Nose, Ears and Lips
- 19.3.4. ZRemesher for a Head
- 19.3.5. Eyebrows and Eyelashes
- 19.3.6. Details and Refinement

19.4. Clothing
- 19.4.1. Clothes
- 19.4.2. Armor
- 19.4.3. Modeled Detail and with Noise Maker

19.5. Tips for Modeling
- 19.5.1. Hands
- 19.5.2. Styled Hair
- 19.5.3. Extra Details with Alphas

19.6. Tips for Modeling Types of Materials
- 19.6.1. Feathers
- 19.6.2. Rocks and Minerals
- 19.6.3. Scales

19.7. Hair with ZBrush
- 19.7.1. Curve Brushes
- 19.7.2. Long Hair with Curve Brush
- 19.7.3. Short Hair or Animal Hair

19.8. Hair with Xgen
- 19.8.1. References and Tool Preparation
- 19.8.2. Application of Modifiers and Tools in Depth
- 19.8.3. Lighting and Rendering

19.9. Posing with Transpose Master
- 19.9.1. TPoseMesh Working with Smooth Masks, Move and Rotate
- 19.9.2. The Importance of the Silhouette
- 19.9.3. TPose SubTool Correct and Finish Detailing

19.10. Character Props and Environment
- 19.10.1. Accessories and Weapons: Elements that Speak of the Character's History
- 19.10.2. Environment and Background Elements Enhance the Character
- 19.10.3. Own Lighting for the Character

Module 20. Export to Unreal

20.1. Unreal Engine
- 20.1.1. Game Exporter
- 20.1.2. Create New Projects and Controls
- 20.1.3. Import Models to Unreal

20.2. Basic Material Properties
- 20.2.1. Create Materials and Nodes
- 20.2.2. Constant and Its Values
- 20.2.3. Texture Sample

20.3. Common Material Nodes
- 20.3.1. Multiply
- 20.3.2. Texture Coordinate
- 20.3.3. Add
- 20.3.4. Fresnel
- 20.3.5. Panner

20.4. Materials and Bloom
- 20.4.1. Linear Interpolate
- 20.4.2. Power
- 20.4.3. Clamp

20.5. Textures to Modify Material
- 20.5.1. Masks
- 20.5.2. Transparent Materials
- 20.5.3. Color Match

20.6. Basic Lighting
- 20.6.1. Light Source
- 20.6.2. Skylight
- 20.6.3. Fog

20.7. Fill and Creative Lighting
- 20.7.1. Point Light
- 20.7.2. Spot Light and Rect Light
- 20.7.3. Objects as Light Sources

20.8. Night Lighting
- 20.8.1. Light Source Properties
- 20.8.2. Fog Properties
- 20.8.3. Skylight Properties

20.9. Lightmaps
- 20.9.1. Viewer Modes Lightmap Density
- 20.9.2. Improve Lightmaps Resolution
- 20.9.3. Lightmass Importance Volume

20.10. Rendering
- 20.10.1. Cameras and Their Properties
- 20.10.2. Basic Post-processing
- 20.10.3. High Resolution Screenshot

Module 21. Study of Figure and Shape

21.1. Geometric Figure
- 21.1.1. Types of Geometric Figures
- 21.1.2. Basic Geometric Constructions
- 21.1.3. Geometric Transformations in the Plane

21.2. Polygons
- 21.2.1. Triangles
- 21.2.2. Quadrilaterals
- 21.2.3. Regular Polygons

21.3. Axonometric System
- 21.3.1. System Fundamentals
- 21.3.2. Types of Orthogonal Axonometry
- 21.3.3. Sketch

21.4. Three-Dimensional Drawing
- 21.4.1. Perspective and Third Dimension
- 21.4.2. Essential Elements of Drawing
- 21.4.3. Perspectives

21.5. Technical Drawing
- 21.5.1. Basic Notions
- 21.5.2. View Disposition
- 21.5.3. Cuts

21.6. Fundamentals of Mechanical Elements I
- 21.6.1. Axes
- 21.6.2. Joints and Bolts
- 21.6.3. Springs

21.7. Fundamentals of Mechanical Elements II
- 21.7.1. Bearings
- 21.7.2. Gears
- 21.7.3. Flexible Mechanical Elements

21.8. Symmetry Laws
- 21.8.1. Translation, Rotation, Reflection, Extension
- 21.8.2. Touching, Overlapping, Subtraction, Intersection, Joining
- 21.8.3. Combined Laws

21.9. Shape Analysis
- 21.9.1. The Shape Function
- 21.9.2. The Mechanical Shape
- 21.9.3. Types of Shapes

21.10. Topological Analysis
- 21.10.1. Morphogenesis
- 21.10.2. Composition
- 21.10.3. Morphology and Topology

Module 22. Hard Surface Modeling

22.1. Hard Surface Modeling
- 22.1.1. Topology Control
- 22.1.2. Function Communication
- 22.1.3. Speed and Efficiency

22.2. Hard Surface I
- 22.2.1. Hard Surface
- 22.2.2. Development
- 22.2.3. Structure

22.3. Hard Surface II
- 22.3.1. Applications
- 22.3.2. Physical Industry
- 22.3.3. Virtual Industry

22.4. Types of Modeling
- 22.4.1. Technical Modeling /Nurbs
- 22.4.2. Polygonal Modeling
- 22.4.3. Sculp Modeling

22.5. Deep Hard Surface Modeling
- 22.5.1. Profiles
- 22.5.2. Topology and Edge Flow
- 22.5.3. Mesh Resolution

22.6. Nurbs Modeling
- 22.6.1. Points, Lines, Polylines, Curves
- 22.6.2. Surfaces
- 22.6.3. 3D Geometry

22.7. Basics of Polygonal Modeling
- 22.7.1. Edit Poly
- 22.7.2. Vertices, Edges, Polygons
- 22.7.3. Surgery

22.8. Basics of Sculpting Modeling
- 22.8.1. Basic Geometry
- 22.8.2. Subdivisions
- 22.8.3. Deformers

22.9. Topology and Retopology
- 22.9.1. High Poly and Low poly
- 22.9.2. Polygonal Counting
- 22.9.3. Bake Maps

22.10. UV Maps
- 22.10.1. UV Coordinates
- 22.10.2. Techniques and Strategies
- 22.10.3. Unwrapping

Module 23. Technical Modeling in Rhino

23.1. Rhino Modeling
- 23.1.1. Rhino Interface
- 23.1.2. Types of Objects
- 23.1.3. Navigating the Model

23.2. Fundamental Notions
- 23.2.1. Editing with Gumball
- 23.2.2. Viewports
- 23.2.3. Modeling Assistants

23.3. Precision Modeling
- 23.3.1. Input by Coordinates
- 23.3.2. Distance and Angle Restriction Input
- 23.3.3. Restriction to Objects

23.4. Command Analysis
- 23.4.1. Additional Modeling Assistants
- 23.4.2. SmartTrack
- 23.4.3. Construction Plans

23.5. Lines and Polylines
- 23.5.1. Circles
- 23.5.2. Free-form Lines
- 23.5.3. Helix and Spiral

23.6. Geometry Editing
- 23.6.1. Fillet and Chanfer
- 23.6.2. Mixing Curves
- 23.6.3. Loft

23.7. Transformations I
- 23.7.1. Move, Rotate, Scale
- 23.7.2. Join, Prune, Spread
- 23.7.3. Separate, Offset, Formations

23.8. Creating Shapes
- 23.8.1. Deformable Shapes
- 23.8.2. Modeling with Solids
- 23.8.3. Solids Transformation

23.9. Creating Surfaces
- 23.9.1. Simple Surfaces
- 23.9.2. Extrusion, Lofting and Surface Revolution
- 23.9.3. Surface Sweeping

23.10. Organisation
- 23.10.1. Layers
- 23.10.2. Groups
- 23.10.3. Blocks

Module 24. Modeling Techniques and Their Application in Rhino

24.1. Techniques
- 24.1.1. Intersection for a Support
- 24.1.2. Creation of a Space Helmet
- 24.1.3. Pipes

24.2. Application I
- 24.2.1. Create a Car Rim
- 24.2.2. Create a Tire
- 24.2.3. Modeling a Clock

24.3. Basic Techniques II
- 24.3.1. Use of Isocurves and Edges for Modeling
- 24.3.2. Make Openings in Geometry
- 24.3.3. Working with Hinges

24.4. Application II
- 24.4.1. Creation of a Turbine
- 24.4.2. Construct Air Inlets
- 24.4.3. Tips for Imitating Edge Thickness

24.5. Tools
- 24.5.1. Tips for Using Mirror Symmetry
- 24.5.2. Use of Fillets
- 24.5.3. Use of Trims

24.6. Mechanical Application
- 24.6.1. Creating Gears
- 24.6.2. Building a Pulley
- 24.6.3. Building a Shock Absorber

24.7. Importing and Exporting Files
- 24.7.1. Send Rhino Files
- 24.7.2. Export Rhino Files
- 24.7.3. Import Rhino Files from Ilustrator

24.8. Analysis Tools I
- 24.8.1. Graphical Curvature Analysis Tool
- 24.8.2. Curve Continuity Analysis
- 24.8.3. Problems and Solutions of Curve Analysis

24.9. Analysis Tools II
- 24.9.1. Surface Direction Analysis Tool
- 24.9.2. Surface Analysis Tool Environment Map
- 24.9.3. Analysis Tool Show Edges

24.10. Strategies
- 24.10.1. Construction Strategies
- 24.10.2. Area Per Network of Curves
- 24.10.3. Work with Blueprints

Module 25. Advanced Modeling in Rhino

25.1. Modeling a Motorbike
- 25.1.1. Importing Reference Images
- 25.1.2. Modeling a Rear Tire
- 25.1.3. Modeling Rear Car Rim

25.2. Mechanical Components Rear Axle
- 25.2.1. Creating the Brake System
- 25.2.2. Building the Transmission Chain
- 25.2.3. Modeling the Chain Cover

25.3. Modeling the Motor
- 25.3.1. Creating the Body
- 25.3.2. Adding Mechanical Elements
- 25.3.3. Incorporating Technical Details

25.4. Modeling of the Main Roof
- 25.4.1. Modeling Curves and Surfaces
- 25.4.2. Modeling of the Roof
- 25.4.3. Cutting the Frame

25.5. Modeling the Upper Zone
- 25.5.1. Building the Seat
- 25.5.2. Creating Details for the Front Area
- 25.5.3. Creating Details for the Rear Area

25.6. Functional Parts
- 25.6.1. Gasoline Tank
- 25.6.2. Rear Lights
- 25.6.3. Front Lights

25.7. Building Front Axle I
- 25.7.1. Break and Rim System
- 25.7.2. The Fork
- 25.7.3. The Handlebars

25.8. Building Front Axle II
- 25.8.1. Handles
- 25.8.2. Break Cables
- 25.8.3. Instruments

25.9. Adding Details
- 25.9.1. Refined Main Body
- 25.9.2. Adding Silencer
- 25.9.3. Incorporating Pedals

25.10. Final Elements
- 25.10.1. Modeling the Windshield
- 25.10.2. Modeling the Support
- 25.10.3. Final Details

Module 26. Polygonal Modeling in 3D Studio Max

26.1. Modeling with References
- 26.1.1. Creation of Reference Images
- 26.1.2. Smoothing Hard Surfaces
- 26.1.3. Scene Organization

26.2. High-Resolution Meshes
- 26.2.1. Basic Smoothing Modeling and Smoothing Groups
- 26.2.2. Modeling with Extrusions and Bevels
- 26.2.3. Using the Modifier Turbosmooth

26.3. Modeling with Splines
- 26.3.1. Modifying Curvatures
- 26.3.2. Configuring the Faces of the Polygons
- 26.3.3. Extruding and Spheronizing

26.4. Creating Complex Shapes
- 26.4.1. Configurating Components and Work Grid
- 26.4.2. Duplicating and Soldering Components
- 26.4.3. Cleaning Polygons and Smoothing

26.5. Modeling with Edge Cuts
- 26.5.1. Creation and Positioning of the Template
- 26.5.2. Making Cuts and Cleaning Topology
- 26.5.3. Extruding Shapes and Creating Folds

26.6. Modeling from the Model Low Poly
- 26.6.1. Starting with the Basic Shape and Adding Chamfers
- 26.6.2. Adding Subdivisions and Generating Edges
- 26.6.3. Cuts, Welds and Details

26.7. Edit Poly Modifer I
- 26.7.1. Work Flow
- 26.7.2. Interface
- 26.7.3. Sub Objects

26.8. Creation of Compound Objects
- 26.8.1. Morph, Scatter, Conform and Connect Compound Objects
- 26.8.2. BlobMesh, ShapeMerge and Boolean Compound Objects
- 26.8.3. Loft, Mesher and Proboolean Compound Objects

26.9. Techniques and Strategies to Create UVs
- 26.9.1. Simple Geometries and Arc Geometries
- 26.9.2. Hard Surfaces
- 26.9.3. Examples and Applications

Module 27. Advanced Polygonal Modeling in 3D Studio MAX

27.1. Modeling a Sci-FI Spacecraft
- 27.1.1. Creating Our Work Space
- 27.1.2. Starting with the Main Body
- 27.1.3. Configuration of Wings

27.2. The Cabin
- 27.2.1. Development of the Cabin Area
- 27.2.2. Modeling the Control Panel
- 27.2.3. Adding Details

27.3. The Fuselage
- 27.3.1. Defining Components
- 27.3.2. Adjusting Minor Components
- 27.3.3. Development of the Panel Under the Body

27.4. The wings
- 27.4.1. Creation of Main Wings
- 27.4.2. Incorporation of the Tail
- 27.4.3. Adding Wing Inserts

27.5. Main Body
- 27.5.1. Separation of Parts into Components
- 27.5.2. Creating Additional Panels
- 27.5.3. Incorporating Dock Doors

27.6. Motors
- 27.6.1. Creating Space for the Motors
- 27.6.2. Constructing Turbines
- 27.6.3. Adding Exhausts

27.7. Incorporating Details
- 27.7.1. Lateral Components
- 27.7.2. Characteristic Components
- 27.7.3. Refining General Components

27.8. Bonus I - Creation of the Pilot's Helmet
- 27.8.1. Head Block
- 27.8.2. Refining Details
- 27.8.3. Modeling the Helmet Neck

27.9. Bonus II - Creation of the Pilot's Helmet
- 27.9.1. Refinements of the Helmet Neck
- 27.9.2. Steps for Final Details
- 27.9.3. Mesh Completion

27.10. Bonus III - Creation of a Co-Pilot Robot
- 27.10.1. Shape Development
- 27.10.2. Adding Details
- 27.10.3. Supporting Edges for Subdivision

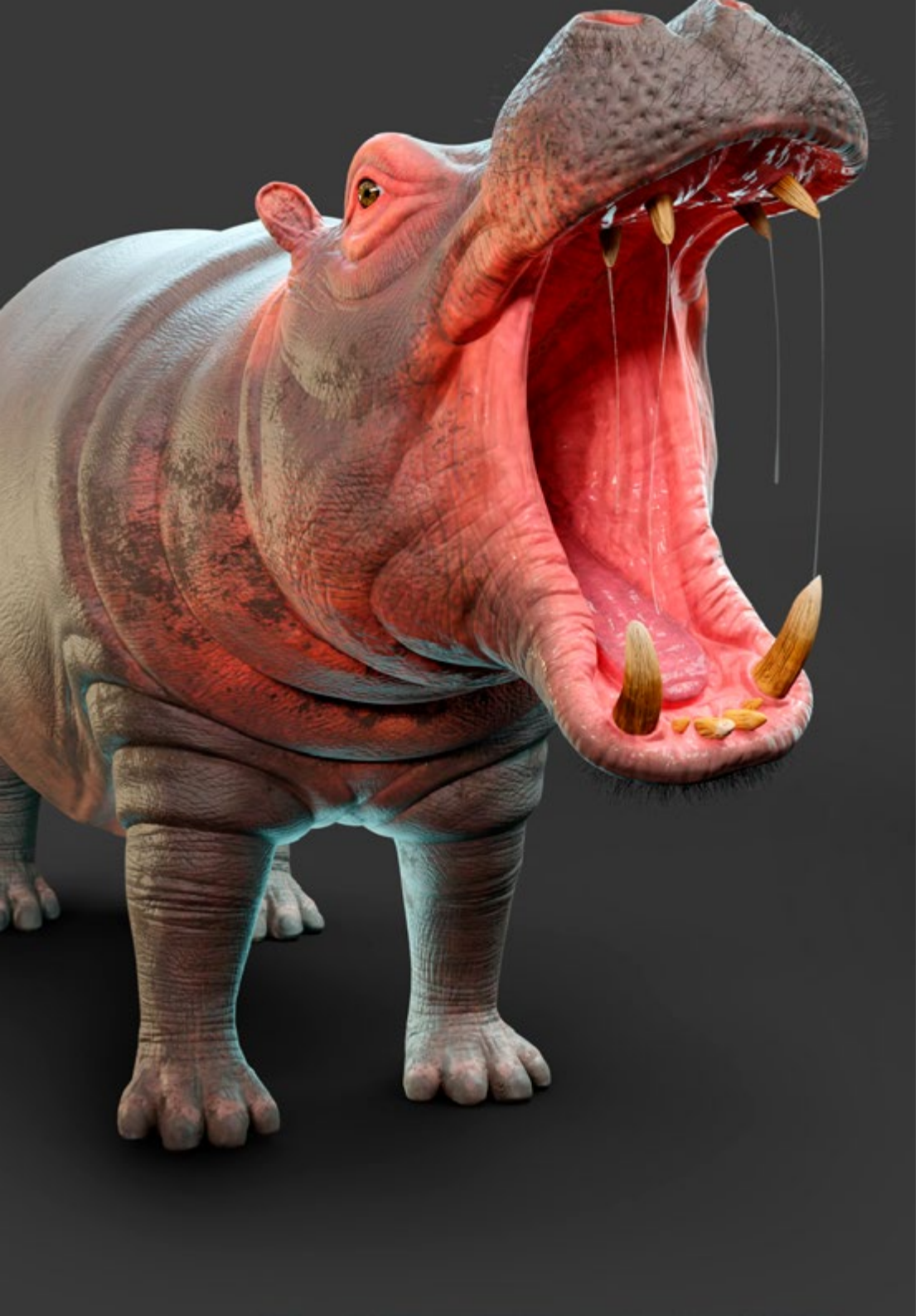
Module 28. Low Poly Modeling in 3D Studio MAX

28.1. Heavy Machinery Vehicle Modeling
- 28.1.1. Creation of the Volumetric Model
- 28.1.2. Volumetric Modeling of Tracks
- 28.1.3. Volumetric Construction of the Shovel

28.2. Incorporating Different Components
- 28.2.1. Cabin Volumetry
- 28.2.2. Volumetry of Mechanical Arm
- 28.2.3. Mechanical Shovel Blade Volumetry

28.3. Adding Subcomponents
- 28.3.1. Creating Shovel Teeth
- 28.3.2. Adding the Hydraulic Piston
- 28.3.3. Connecting Subcomponents

28.4. Incorporating Details into Volumetries I
- 28.4.1. Creating Caterpillars from Tracks
- 28.4.2. Incorporating Track Bearings
- 28.4.3. Defining the Track Housing



28.5. Incorporating Details to Volumetries II
- 28.5.1. Chassis Subcomponents
- 28.5.2. Bearing Covers
- 28.5.3. Adding Piece Cuts

28.6. Incorporating Details to Volumetries III
- 28.6.1. Creating Radiators
- 28.6.2. Adding the Hydraulic Arm Base
- 28.6.3. Creating the Exhaust Pipes

28.7. Incorporating Details to Volumetries IV
- 28.7.1. Creating the Cabin Protective Grill
- 28.7.2. Adding Pipes
- 28.7.3. Adding Nuts, Bolts and Rivets

28.8. Developing the Hydraulic Arm
- 28.8.1. Creating Supports
- 28.8.2. Retainers, Washers, Screws and Connections
- 28.8.3. Creation of the Head

28.9. Developing the Cabin
- 28.9.1. Defining the Casing
- 28.9.2. Adding Windshields
- 28.9.3. Latch and Headlight Details

28.10. Mechanical Development of the Excavator
- 28.10.1. Creating the Body and Teeth
- 28.10.2. Creation of the Toothed Roller
- 28.10.3. Wiring with Splines, Connectors and Fasteners

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.

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

A learning method that is different and innovative

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

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

The case method is the most widely used learning system in the best faculties in the world. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question we face in the case method, an action-oriented learning method. Throughout the program, the studies will be presented with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their ideas and decisions.

Relearning Methodology

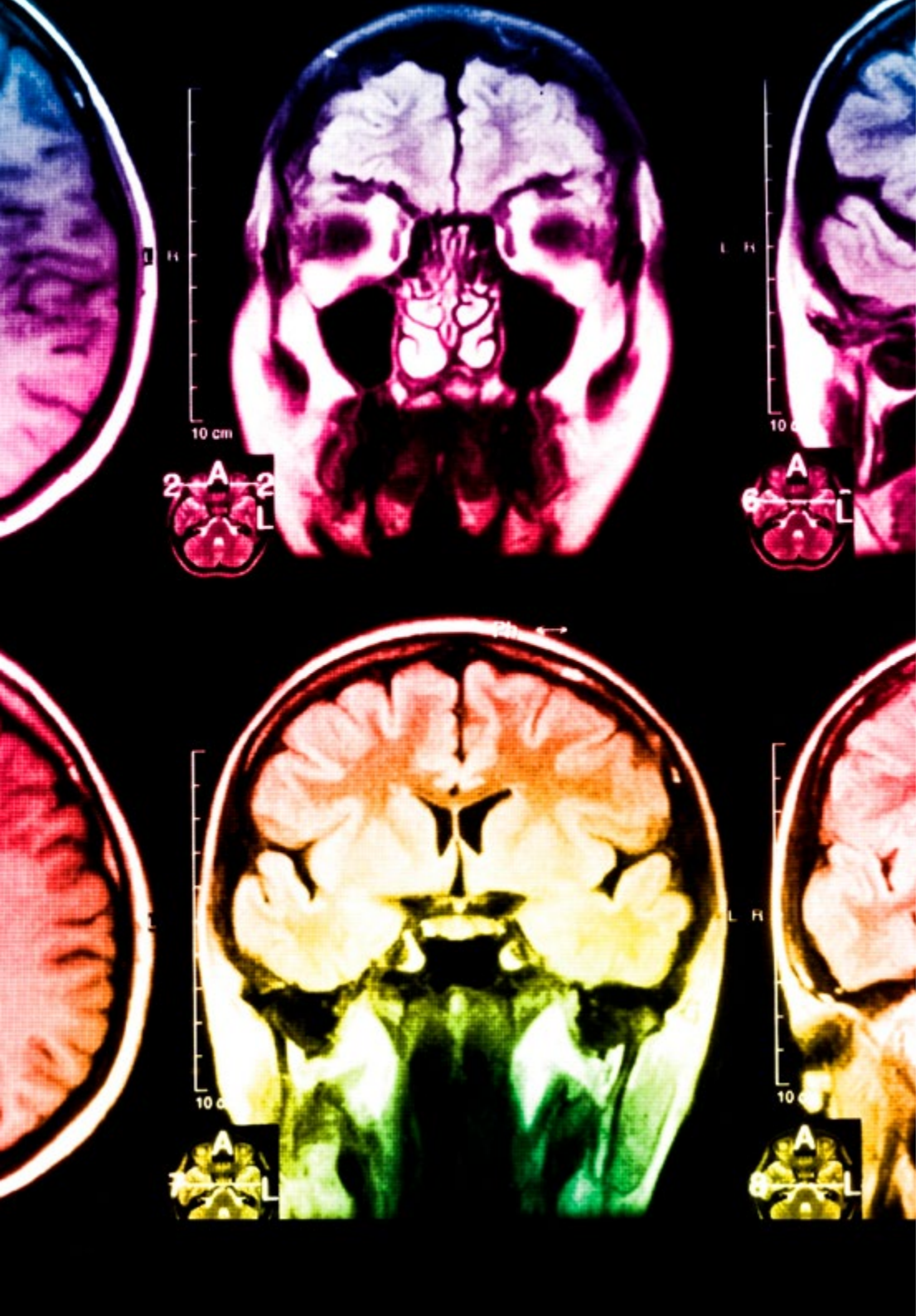
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

In 2019, we obtained the best learning results of all online universities in the world.

At TECH you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our university is the only one in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.



In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and relearn). Therefore, we combine each of these elements concentrically. With this methodology we have trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, markets, and financial instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

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

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

In this way, and in what is called neurocognitive context-dependent elearning, 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.

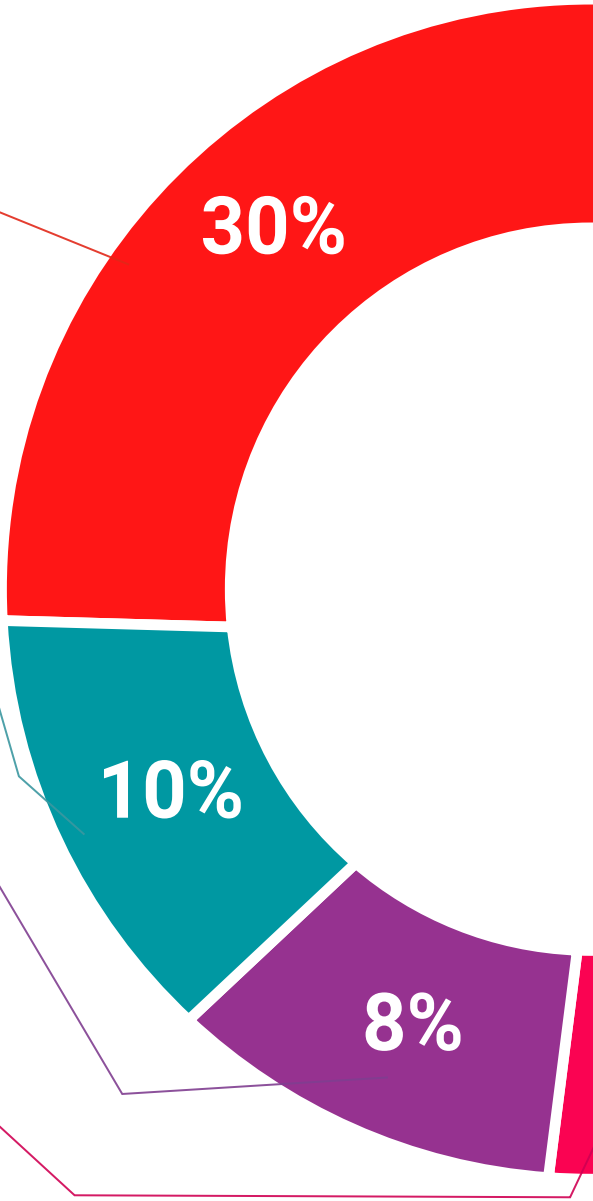
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

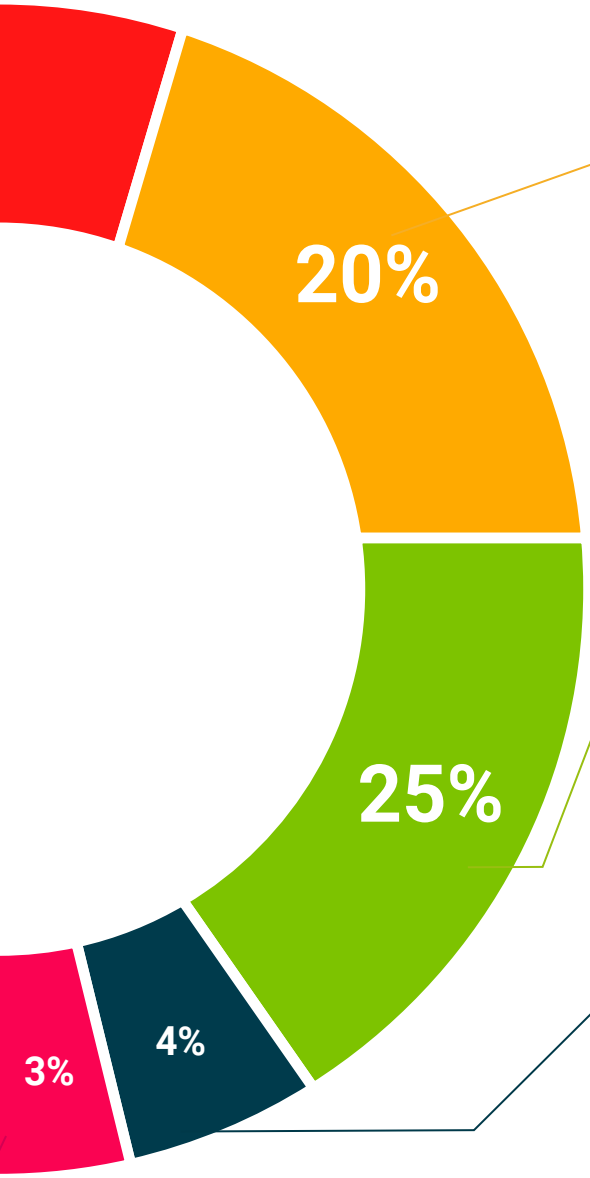
Practising Skills and Abilities

They will carry out activities to develop specific competencies and skills in each thematic area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.

Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Case Studies

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

Interactive Summaries

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

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

Testing & Retesting

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

07

Certificate

The Advanced Master's Degree in Integral 3D Modeling guarantees you, in addition to the most rigorous and updated training, access to a Advanced Master's Degree issued by TECH Technological University.

Successfully complete this program and receive your university degree without travel or laborious paperwork"

This **Advanced Master's Degree in Integral 3D Modeling** contains the most complete and updated program on the market.

After the student has passed the evaluations, they will receive their corresponding **Advanced Master's Degree** issued by **TECH Technological University***.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Advanced Master's Degree, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional from career evaluation committees.

Title: **Advanced Master's Degree in Integral 3D Modeling**
Official N.º of Hours: **3,000 h.**

tech technological university

Awards the following

CERTIFICATE

to

Mr./Ms. _____, with identification number _____

For having successfully passed and accredited the following program

ADVANCED MASTER'S DEGREE

in

Integral 3D Modeling

This is a qualification awarded by this University, equivalent to 3,000 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
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

Advanced Master's Degree in Integral 3D Modeling

General Structure of the Syllabus

Year	Subject	Hours	Type
1º	Anatomy	111	CO
1º	Retopology and Maya Modeling	107	CO
1º	UV's and Texturing with AllegorithmicSubstance Painter and Mari	107	CO
1º	Rendering, Lighting and Model Posing	107	CO
1º	Hair Creation for Video Games and Movies	107	CO
1º	Clothing Simulation	107	CO
1º	Stylized Characters	107	CO
1º	Creature Modeling	107	CO
1º	Blender: a New Twist in the Industry	107	CO
1º	Creation of Organic Environments in Unreal Engine	107	CO
1º	3D Modeling with 3DS Max	107	CO
1º	3D Modeling with Advanced 3DS Max	107	CO
1º	3D Modeling with Graphite Tool	107	CO
1º	3D Modeling with ZBrush	107	CO

Year	Subject	Hours	Type
2º	Texturing	107	CO
2º	Texturing with Substance Painter	107	
2º	Rendering	107	CO
2º	Rendering with VRay Engine in 3DS Max	107	CO
2º	Characters	107	CO
2º	Export to Unreal	107	CO
2º	Study of Figure and Shape	107	CO
2º	Hard Surface Modeling	107	CO
2º	Technical Modeling in Rhino	107	CO
2º	Modeling Techniques and Their Application in Rhino	107	CO
2º	Advanced Modeling in Rhino	107	CO
2º	Polygonal Modeling in 3D Studio Max	107	CO
2º	Advanced Polygonal Modeling in 3D Studio MAX	107	CO
2º	Low Poly Modeling in 3D Studio MAX	107	CO

Tere Guevara Navarro
Dean

tech technological university

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

tech technological university

Advanced Master's Degree

Integral 3D Modeling

- Modality: **online**
- Duration: **2 years**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Advanced Master's Degree
Integral 3D Modeling

tech technological university