

# Advanced Master's Degree

## Character Design for Video Games



## Advanced Master's Degree Character Design for Video Games

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

Website: [www.techtitute.com/us/videogames/advanced-master-degree/advanced-master-degree-character-design-video-games](http://www.techtitute.com/us/videogames/advanced-master-degree/advanced-master-degree-character-design-video-games)

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# 01

# Introduction

Video games have positioned themselves in recent years as one of the most powerful economic and artistic sectors worldwide. As such, companies in this field are constantly looking for new talent with whom to develop and design their new games, so the professional who wishes to progress in this area needs the latest knowledge and skills. This program focuses on character design, one of the fundamental aspects in the creation of a video game, and will provide the student with all the tools to carry out this task according to the requirements of the major companies in this industry.



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*This program will allow you to learn the best techniques for designing and modeling characters for video games, preparing you to progress immediately in this great booming industry"*

Of the cultural industries that exist today, video games are one of the most important. In the last 10 years it has advanced by leaps and bounds, reaching hundreds of millions of players around the world. For this reason, many companies, both industry giants and independent companies, need qualified specialists who can carry out the complex but exciting tasks involved in each new title.

Character design is one of the most important tasks when creating one of these works, as it will define, to a large extent, the game experience. Therefore, this is one of the most sought-after professional profiles, and this Advanced Master's Degree in Character Design for Videogames will provide the student with all the necessary skills to progress in one of the major companies in this sector. Thus, this program will allow you to delve into issues such as the management of specialized design software such as Blender, Arnold or ZBrush, and modeling techniques, both 2D and 3D, applied to the visual creation of characters.

All of this is based on a 100% online teaching methodology that will allow the professional to continue working without interruptions, since it is completely adapted to his or her personal circumstances. In addition, you will be accompanied by a teaching staff of great prestige in the field of video game design, which will provide students with the best tools from numerous multimedia resources such as videos, case studies, lectures and master classes.

This **Advanced Master's Degree in Characters Design for Video Games** 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 character design for video games
- ♦ 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
- ♦ Its special emphasis on innovative methodologies in character design
- ♦ 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



*Learn in depth, thanks to this Advanced Master's Degree, the most advanced specialized software and become an expert in Blender or ZBrush"*

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*The best teaching staff will accompany you throughout the learning process, ensuring that you get the most cutting-edge knowledge in character design for video games"*

Its teaching staff includes professionals belonging to the field of video game design, who pour into this program the experience of their work, as well as recognized specialists from leading companies 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.

*With TECH's online methodology you will be able to combine your professional life with your studies, since it will be completely adapted to your personal circumstances.*

*Videos, lectures, master classes, interactive summaries... The best technology and the best educational resources at your fingertips.*



# 02 Objectives

The main objective of this Advanced Master's Degree in Character Design for Video Games is to enable the professional to make significant progress in this important cultural industry. To this end, TECH has been responsible for bringing together the best teaching staff and developing the most advanced content in this area, so that the designer can have the most cutting-edge tools to excel in a sector that is constantly growing.





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*Advance professionally thanks to this Advanced Master's Degree, specially designed to provide students with the best techniques in Character Design for Video Games"*



## General Objectives

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- ◆ Encourage the necessary documentation and reference taking needed to do the job correctly
- ◆ Know how to structure, create and build characters
- ◆ Gain deeper knowledge in the development of model portfolios needed in the animation industry
- ◆ Create all types of vehicles and objects for use in any of the 2D and 3D animation disciplines
- ◆ Master the anatomy of all kinds of animals
- ◆ Analyze the development and creation of horror characters
- ◆ Master the art of adding color to characters created
- ◆ Exhaustively develop characters specifically for 2D and 3D videogames
- ◆ Expand knowledge of human and animal anatomy in order to develop hyper-realistic creatures
- ◆ Master the retopology, UV 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





## Specific Objectives

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### Module 1. Characters

- ◆ Know the different styles and techniques for character creation
- ◆ Differentiate between cartoon, manga and realistic characters
- ◆ Develop skills in animal character creation
- ◆ Delve into the physical, psychological and literary characteristics of the characters

### Module 2. Character Building

- ◆ Define the lines of action for the characters and their complex forms
- ◆ Study the anatomy, hair and head of characters
- ◆ Gain in-depth knowledge in cartoon characters and animals and how to define them
- ◆ Know the correct representation of limbs and hands in different types of characters

### Module 3. Model Sheet

- ◆ Recognize the importance of a good *Model Sheet* in the artist's workflow
- ◆ Study the expressions, poses and guidelines that are essential in the *Model Sheet*
- ◆ Gain in-depth knowledge in the codes of mouths and staging of characters through the *Model Sheet*
- ◆ Elaborate a good failure sheet, essential for the later animation

### Module 4. Props. Vehicles and Accessories

- ◆ Know the different types of real, fantastic and science fiction props accessories
- ◆ Deepen knowledge in the creation of cars, motorbikes and futuristic or current-day vehicles
- ◆ Develop the ability to create firearms and bladed and futuristic weapons
- ◆ Correctly integrate the different types of Props in the video game

### Module 5. Animals

- ◆ Study the difference between canines, felines, herbivores and big mammals
- ◆ Differentiate between realistic and cartoon animals for their correct elaboration
- ◆ Analyze other types of marine animals, birds, reptiles, amphibians and insects
- ◆ Know about dinosaurs in order to correctly execute their animation, creation and postures

### Module 6. Objects and Plants as Characters

- ◆ Expand knowledge of the representation of flowers, vegetables, fruits and other types of plants
- ◆ Know examples and possible expressions of carnivorous plants
- ◆ Analyze the types of trees to create and design, as well as their possible role as characters
- ◆ Learn how to create household appliances and vehicles of different types and construction

### Module 7. Fantastical Creatures

- ♦ Deepen understanding of the different types of fantastic creatures
- ♦ Correctly differentiate between the different kinds of flying, aquatic and subterranean creatures
- ♦ Learn about the different types of fairytale creatures and hybrid beings, as well as demons and giants
- ♦ Learn to represent gods and demigods with greater strength

### Module 8. Horror Characters

- ♦ Know the anatomy of horror characters and the keys to their correct representation
- ♦ Deepen knowledge in the creation and design of vampires, werewolves and mummies
- ♦ Analyze classic horror figures such as Frankenstein's monster or Dr. Jekyll and Mr. Hyde
- ♦ Know the geometric shapes that define extraterrestrial or alien beings

### Module 9. Color

- ♦ Study color, its bases and theory of light and color itself
- ♦ Know the chromatic relationships between temperature, contrast and balance
- ♦ Analyze the psychology of color and the symbolism of certain colors
- ♦ Examine the digital applications that all content has

### Module 10. Videogames and Characters

- ♦ Expand knowledge of the implementation of characters in videogames
- ♦ Know the fundamental differences between 2D and 3D
- ♦ Establish your own style of characters, light and colors
- ♦ Create a good working methodology with references for 3D modeling

### Module 11. Anatomy

- ♦ Investigate both male and female human anatomy
- ♦ Develop the highly detailed human body
- ♦ Hyper-realistic face sculpting

### Module 12. Retopology and Maya Modeling

- ♦ Master the different professional sculpting techniques
- ♦ Create advanced full body and face retopology in Maya
- ♦ Learn how to apply details using *Alphas* and brushes in ZBrush

### Module 13. UVs and Texturing with Allegorithmic Substance Painter and Mari

- ♦ Study the most optimal way to UV 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 our models
- ♦ Delve into the import of our textures in Maya

### Module 14. Rendering, Lighting and Posing of Models

- ♦ Discover advanced lighting and photography concepts to sell models more efficiently
- ♦ Develop the learning of model posing by means of different techniques
- ♦ Delve into the development of a Rig in Maya for the subsequent possible animation of the model
- ♦ Observe the control and use of the rendering of the model, bringing out all its details

**Module 15. Hair Creation for Video Games and Movies**

- ♦ 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 hairbrushes in ZBrush

**Module 16. Clothing Simulation**

- ♦ Study the use of Marvelous Designer
- ♦ Create fabric simulations in Marvelous Designer
- ♦ Practice different types of complex patterns in Marvelous Designer
- ♦ Delve into the Workflow of professional work from Marvelous to ZBrush
- ♦ Develop the texturing and shading of clothes and fabrics in Mari

**Module 17. Stylized Characters**

- ♦ Focus anatomical knowledge in simpler, cartoon-like forms
- ♦ Create a cartoon model from the base to the detail by applying what has been previously learned
- ♦ Review the techniques learned in the course in a different modeling style

**Module 18. Creature Modeling**

- ♦ Learn 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

**Module 19. Blender: A New Twist in the Industry**

- ♦ Outstanding 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

**Module 20. Creation of Organic Environments in Unreal Engine**

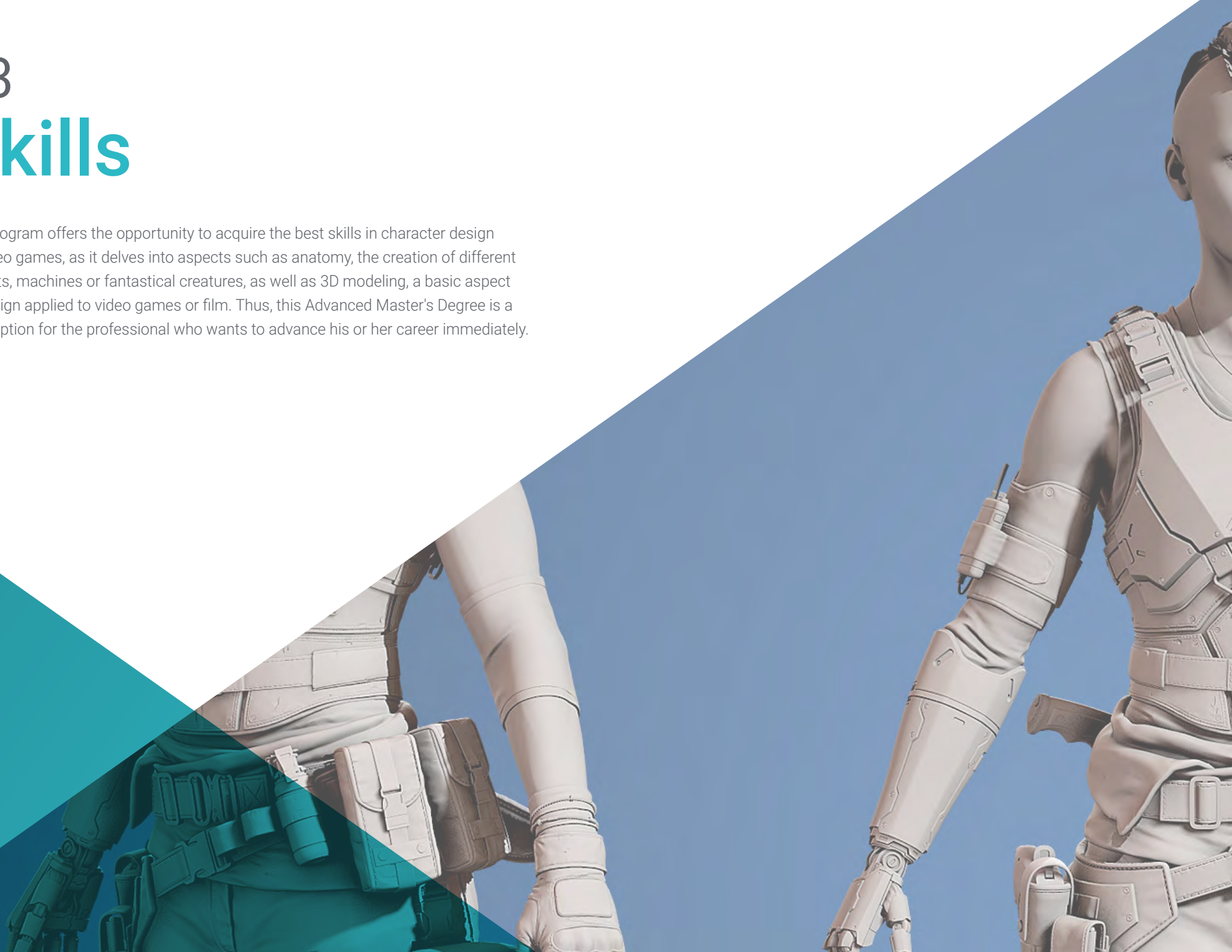
- ♦ Study software functionality and project configuration
- ♦ Delve into the study of PST and the Storytelling of the scene to achieve a good design for our Environment
- ♦ Learn the different terrain and organic modeling techniques, as well as the implementation of our own scanned models
- ♦ Delve into 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 configurations
- ♦ Develop knowledge about the different types of lights, atmospheres, particles and fog, how to place different types of cameras and how to take pictures to have our composition in different ways



*The best video game companies will want to count on you for their new projects when you complete this Advanced Master's Degree"*

# 03 Skills

This program offers the opportunity to acquire the best skills in character design for video games, as it delves into aspects such as anatomy, the creation of different artifacts, machines or fantastical creatures, as well as 3D modeling, a basic aspect for design applied to video games or film. Thus, this Advanced Master's Degree is a great option for the professional who wants to advance his or her career immediately.





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*Develop, thanks to this program, the skills in character design for video games that will allow you to stand out as a prestigious professional in the industry"*



## General Skills

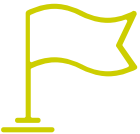
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- ◆ Know and have a global vision of character creation
- ◆ Study the complete pre-production period of a project
- ◆ Giving personality and style to the characters and *Props* created
- ◆ Develop with professionalism in cartoon, fantastic or realistic styles
- ◆ Understand the steps necessary to create characters, *Props* or creatures of any kind
- ◆ Create any kind of completely organic living being including its clothes and *Props* autonomously and with high quality
- ◆ Adapt to any type of *Workflow* in the sector, using the most convenient for each type of work
- ◆ Create the skeleton of a character using a *Rig* to test its functionality and correct bugs
- ◆ Use the best and most widespread software in the industry in the field of 3D modeling and sculpting



*When you finish this program, you will be prepared to face all the challenges of the video game industry"*





## Specific Skills

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- ♦ Create characters based on all types of vegetables
- ♦ Create all kinds of fantastic characters
- ♦ Master the creation of characters from the first sketch to the final composition
- ♦ Create a work discipline that includes the correct creation of a Model Sheet
- ♦ Build models of classic, modern and futuristic vehicles and accessories
- ♦ Turn plant objects into cartoon or realistic animated characters
- ♦ Design fantastic or horror characters in a realistic and professional way
- ♦ Know the color palette as well as the applicable theories of color and light
- ♦ Differentiate between all the types of animals possible to create, including dinosaurs
- ♦ Understand the methodology and implementation of characters in videogames
- ♦ In-depth knowledge of the anatomy of the body, making the most of every detail
- ♦ Lay the artistic foundations to differentiate yourself from other designers
- ♦ Create great human models, both male and female
- ♦ Solve problems of other work departments
- ♦ Increase the professionalism of the student with cross-cutting competencies in rhetoric
- ♦ Understand the influence of a good topology at all levels of production
- ♦ Master Mari software, which is widely used in the film industry
- ♦ Knowledge of the standard in video game texturing through Substance
- ♦ Delve into the current demands of the film and video game industry to offer the best possible design solutions
- ♦ Mastering rendering to avoid models that look bad or do not meet required standards
- ♦ Present design models and 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

# 04

## Course Management

The teaching staff of this Advanced Master's Degree in Character Design for Video Games is composed of real experts in this area who develop their professional careers as designers in different videogame projects. This ensures that these faculty members transfer the latest techniques in this field to the student, so that they can apply them in their work immediately.





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*The best teaching staff will transfer the most advanced techniques in character design to you so that your professional career progresses rapidly”*

## International Guest Director

Joshua Singh is a leading professional with over 20 years of experience in the **video game** industry, internationally recognized for his skills in **art direction** and **visual development**. With solid training in **software** such as **Unreal, Unity, Maya, ZBrush, Substance Painter and Adobe Photoshop**, he has made a significant mark in the field of **game design**. In addition, his experience spans **visual development** in both 2D and 3D, and is distinguished by his ability to collaboratively and thoughtfully solve problems in **production environments**.

In addition, as **Art Director at Marvel Entertainment**, he has collaborated with and guided elite teams of artists, ensuring that the artwork meets the required quality standards. He has also served as Lead Character Artist at Proletariat Inc. where he has created a safe environment for his team and has been responsible for all character assets in **video games**.

With an outstanding track record, including **leadership** roles at companies such as **Wildlife Studios** and **Wavedash Games**, Joshua Singh has been an advocate for artistic development and a mentor to many in the industry. Not to mention his time at large and well-known companies, such as **Blizzard Entertainment** and **Riot Games**, where he has worked as a **Senior Character Artist**. And, among his most relevant projects, stands out for his participation in hugely successful **video games**, including **Marvel's Spider-Man 2, League of Legends and Overwatch**.

Thus, his ability to unify the vision of **Product, Engineering and Art** has been fundamental to the success of numerous projects. Beyond his work in the industry, he has shared his experience as an instructor at the prestigious Gnomon School of VFX and has been a presenter at renowned events such as the **Tribeca Games Festival** and the **ZBrush Summit**.



## D. Singh, Joshua

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- Art Director at Marvel Entertainment, California, USA
- Lead Character Artist at Proletariat Inc.
- Art Director at Wildlife Studios
- Art Director at Wavedash Games
- Senior Character Artist at Riot Games
- Senior Character Artist at Blizzard Entertainment
- Artist at Iron Lore Entertainment
- 3D Artist at Sensory Sweep Studios
- Senior Artist at Wahoo Studios/Ninja Bee
- General Studies from Dixie State University
- Degree in Graphic Design from Eagle Gate Technical College



*Thanks to TECH, you will be able to learn with the best professionals in the world"*

## Management



### Ms. Gómez Sanz, Carla

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



### Mr. Quilez Jordán, Francisco Manuel

- Background designer and assistant on the Goya award winning short film "Pollo"
- Background designer, storyboarder, animator and assistant on projects such as "A Midsummer Night's Dream", "The Spirit of the Forest", "Wrinkles" and "Phineas and Ferb"
- Intercalator and designer at 12 Pingüinos with projects such as "Las Tres Mellizas" or "Juanito Jones"

## Professors

### Mr. Sirgo González, Manuel

- ♦ Manager and director of the production company 12 Pingüinos SL
- ♦ Manager and director of the production company Cazatalentos SL
- ♦ Academic Member of the Academy of Motion Picture Arts and Sciences of Spain
- ♦ Professor at the Complutense University of Madrid, in the Faculty of Fine Arts, of the course Experimental Drawing and 2D Animation

### Dr. Delgado Sánchez, Cruz

- ♦ Production coordinator of several feature films and television series: Gulliver's Travels, The 4 Musicians of Bremen (Goya Award), Los Trotamúsicos (also screenwriter)
- ♦ PhD in Audiovisual Communication
- ♦ Professor of Production and Scriptwriting and coordinator of the Animation Specialty at ECAM (School of Cinematography and Audiovisuals of the Community of Madrid)
- ♦ Professor of the subject History of Animation Cinema at the University School of Design, Innovation and Technology (ESNE) and at U-tad
- ♦ Lecturer on topics related to animated films at several universities (CEES European University, San Pablo-CEU)
- ♦ Academic Member of the Academy of Motion Picture Arts and Sciences
- ♦ Author of five books on animation and contributor to different written media
- ♦ Collaborator on cinematographic topics in various programs of Cadena COPE

### Mr. Rodríguez Tendero, Rodrigo

- ♦ Cartoon collaborations with the 12 Pingüinos Studio: Tirma, Chupachups, Parque Temático Warner, Kalise-Menorquina, Las tres mellizas, Pollo (short film winner of the Goya Award for best animated short film)
- ♦ Design and Illustration Projects in Merlin Games, Antivirus McAfee, Revista Club Megatrix, Amstel and Ikea, among many others

### Mr. Custodio, Nacho

- ♦ Freelance Animator with 20 years experience
- ♦ Collaborator as an animator in short films such as Another way to fly, Kuri and Cazatalentos; Cut out series such as Forrito and Four and half friends, 3d series such as Nivis and feature films like Arrugas



*The leading professionals in the field have come together to offer you the most comprehensive knowledge in this field, so that you can develop with total guarantees of success"*

# 05

## Structure and Content

This Advanced Master's Degree in Character Design for Video Games has been designed by internationally renowned experts in this field, who have structured this program in 20 specialized modules. Thus, throughout the program, the professional will learn about the latest advances in the design of *Props* for video games, the creation of fantastic creatures, retopology and modeling with Maya or the use of ZBrush, among many other relevant aspects.





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*With this program, you will learn the best 2D design and 3D modeling techniques that will make you progress professionally immediately"*

## Module 1. Characters

- 1.1. Characters
  - 1.1.1. Analysis and Development of Characters
  - 1.1.2. Styles and Designs Based on Zones and Cultures
  - 1.1.3. Evolution of Characters and Current Styles
- 1.2. Styles of Each Product
  - 1.2.1. Characters for Cinema
  - 1.2.2. Characters for Series
  - 1.2.3. Characters for Videogames
- 1.3. Style Techniques
  - 1.3.1. 2D
  - 1.3.2. 3D
  - 1.3.3. Cut-Out
- 1.4. Characters in Advertising
  - 1.4.1. Advertising Styles Through History
  - 1.4.2. Current 2D
  - 1.4.3. Current 3D
- 1.5. Analysis of Types of Characters
  - 1.5.1. Cartoon
  - 1.5.2. Manga
  - 1.5.3. Realistic
- 1.6. Typology
  - 1.6.1. Hero– Antihero
  - 1.6.2. Villain– Antithesis
  - 1.6.3. Strongman– Goofy
- 1.7. Image Type
  - 1.7.1. Professions
  - 1.7.2. Age
  - 1.7.3. Personalities
- 1.8. Animal Characters
  - 1.8.1. Zoomorphic Humans
  - 1.8.2. Anthropomorphic Animals
  - 1.8.3. Pets

- 1.9. Characteristics of Characters
  - 1.9.1. Literary
  - 1.9.2. Psychological Techniques/Tactics
  - 1.9.3. Physical
- 1.10. Merchandising of Characters
  - 1.10.1. History
  - 1.10.2. Style Guides
  - 1.10.3. Commercial Application

## Module 2. Character Building

- 2.1. Geometric Shapes
  - 2.1.1. Basic
  - 2.1.2. Combination of Shapes
  - 2.1.3. Axis
- 2.2. Lines of Action
  - 2.2.1. Curves, Horizontal and Diagonal
  - 2.2.2. Simple Shapes in the Line of Action
  - 2.2.3. Structure and Extremities
- 2.3. Complex Shapes
  - 2.3.1. Combined Geometries
  - 2.3.2. Pose
  - 2.3.3. Division of Heads
- 2.4. Anatomy
  - 2.4.1. Classic Human Canon
  - 2.4.2. Proportions
  - 2.4.3. Action Poses
- 2.5. Head
  - 2.5.1. Construction
  - 2.5.2. Axis
  - 2.5.3. Eyes and Parts of the Face
- 2.6. Hair
  - 2.6.1. Female
  - 2.6.2. Male
  - 2.6.3. Hairstyles

- 2.7. Creation of Cartoon Characters
  - 2.7.1. Exaggerated Proportions
  - 2.7.2. Heads and Expressions
  - 2.7.3. Silhouette and Poses
- 2.8. Cartoon Animals
  - 2.8.1. Pets
  - 2.8.2. Quadrupeds and Birds
  - 2.8.3. Other Types
- 2.9. Extremities
  - 2.9.1. Construction
  - 2.9.2. Joints
  - 2.9.3. Poses
- 2.10. Hands
  - 2.10.1. General Construction
  - 2.10.2. Human
  - 2.10.3. Cartoon

### Module 3. Model Sheet

- 3.1. Construction
  - 3.1.1. Three Quarters
  - 3.1.2. Division of Heads
  - 3.1.3. Clean Up
- 3.2. Turn Around
  - 3.2.1. The Five Poses
  - 3.2.2. Guidelines
  - 3.2.3. Symmetries and Asymmetries
- 3.3. Poses
  - 3.3.1. Action Poses
  - 3.3.2. Interrelation with Props
  - 3.3.3. Position of the Camera in the Pose
- 3.4. Expressions
  - 3.4.1. Neutral
  - 3.4.2. Happy
  - 3.4.3. Sad and Angry

- 3.5. Hands
  - 3.5.1. Construction
  - 3.5.2. Positions and Turns
  - 3.5.3. Interrelation with Props
- 3.6. Comparisons
  - 3.6.1. Division of Heads and Guidelines
  - 3.6.2. Adjustment of the Other Characters to the Main Character
  - 3.6.3. Interrelation
- 3.7. Mouth Movements
  - 3.7.1. Universal Standard and Add-ons
  - 3.7.2. Corresponding to Phonetic Sayings and Reading
  - 3.7.3. Neutral, Happy, Angry and Sad
- 3.8. Blinks
  - 3.8.1. Neutral Forms and Other Expressions
  - 3.8.2. Closed Position
  - 3.8.3. Interleaved
- 3.9. Staging
  - 3.9.1. Background Position
  - 3.9.2. Camera Positions
  - 3.9.3. Relations
- 3.10. Error Sheets
  - 3.10.1. Do's
  - 3.10.2. Don'ts
  - 3.10.3. Animator Support

### Module 4. Props. Vehicles and Accessories

- 4.1. Props
  - 4.1.1. What is a Prop?
  - 4.1.2. Generalities
  - 4.1.3. Props with a Strong Argument
- 4.2. Add-Ons
  - 4.2.1. Add-Ons and Wardrobe
  - 4.2.2. Real Accessories. Professions
  - 4.2.3. Fantasy or Science Fiction Add-Ons

- 4.3. Cars
  - 4.3.1. Classic
  - 4.3.2. Current
  - 4.3.3. Futuristic
- 4.4. Motorcycles
  - 4.4.1. Current
  - 4.4.2. Futuristic
  - 4.4.3. 3-Wheeled Vehicles
- 4.5. Other Vehicles
  - 4.5.1. Land
  - 4.5.2. Air
  - 4.5.3. Sea
- 4.6. Weapons
  - 4.6.1. Types and Sizes
  - 4.6.2. Design Based on Century
  - 4.6.3. Shields
- 4.7. Firearms
  - 4.7.1. Long
  - 4.7.2. Short
  - 4.7.3. Functioning Moving Parts
- 4.8. Futuristic Weapons
  - 4.8.1. Fire
  - 4.8.2. Energy
  - 4.8.3. FX of Futuristic Weapons
- 4.9. Armor
  - 4.9.1. Classic and Current
  - 4.9.2. Futuristic
  - 4.9.3. Mechanized and Robotic
- 4.10. Props in Videogames
  - 4.10.1. Differences with Animation Props
  - 4.10.2. Props and Their Uses
  - 4.10.3. Design

## Module 5. Animals

- 5.1. Quadrupeds
  - 5.1.1. Compared Anatomy
  - 5.1.2. Realistic Models and Their Use
  - 5.1.3. Cartoon
- 5.2. Canines
  - 5.2.1. Anatomy
  - 5.2.2. Design
  - 5.2.3. Poses
- 5.3. Felines
  - 5.3.1. Compared Anatomy
  - 5.3.2. Design
  - 5.3.3. Poses
- 5.4. Herbivores
  - 5.4.1. Ruminants
  - 5.4.2. Equine
  - 5.4.3. Cartoon
- 5.5. Big Mammals
  - 5.5.1. Compared Anatomy
  - 5.5.2. Construction
  - 5.5.3. Poses
- 5.6. Marine Creatures
  - 5.6.1. Mammals
  - 5.6.2. Fish
  - 5.6.3. Crustaceans
- 5.7. Birds
  - 5.7.1. Anatomy
  - 5.7.2. Poses
  - 5.7.3. Cartoon
- 5.8. Amphibious Reptiles
  - 5.8.1. Construction
  - 5.8.2. Poses
  - 5.8.3. Cartoon

- 5.9. Dinosaurs
  - 5.9.1. Types
  - 5.9.2. Construction
  - 5.9.3. Poses
- 5.10. Insects
  - 5.10.1. Design
  - 5.10.2. Poses
  - 5.10.3. Comparisons

## Module 6. Objects and Plants as Characters

- 6.1. Flowers
  - 6.1.1. Examples:
  - 6.1.2. Construction
  - 6.1.3. Poses and Expressions
- 6.2. Vegetables
  - 6.2.1. Examples:
  - 6.2.2. Construction
  - 6.2.3. Poses and Expressions
- 6.3. Fruit
  - 6.3.1. Examples:
  - 6.3.2. Construction
  - 6.3.3. Poses and Expressions
- 6.4. Carnivorous Plants
  - 6.4.1. Examples:
  - 6.4.2. Construction
  - 6.4.3. Poses and Expressions
- 6.5. Trees
  - 6.5.1. Types
  - 6.5.2. Construction
  - 6.5.3. Poses and Expressions
- 6.6. Shrubs
  - 6.6.1. Types
  - 6.6.2. Construction
  - 6.6.3. Poses and Expressions

- 6.7. Objects
  - 6.7.1. Examples:
  - 6.7.2. Personality
  - 6.7.3. Types
- 6.8. Household Appliances
  - 6.8.1. Types
  - 6.8.2. Construction
  - 6.8.3. Poses and Expressions
- 6.9. Vehicles
  - 6.9.1. Types
  - 6.9.2. Construction
  - 6.9.3. Poses and Expressions
- 6.10. Other Objects
  - 6.10.1. Types
  - 6.10.2. Construction
  - 6.10.3. Poses and Expressions

## Module 7. Fantastic Creatures

- 7.1. Dragons and Hydras
  - 7.1.1. Examples:
  - 7.1.2. Construction
  - 7.1.3. Poses and Expressions
- 7.2. Giants
  - 7.2.1. Examples:
  - 7.2.2. Construction
  - 7.2.3. Poses and Expressions
- 7.3. Flyers
  - 7.3.1. Compared Anatomy
  - 7.3.2. Construction
  - 7.3.3. Poses and Expressions
- 7.4. Aquatic
  - 7.4.1. Modifications of Real Types
  - 7.4.2. Construction
  - 7.4.3. Poses and Expressions

- 7.5. Subterranean
  - 7.5.1. Geometric Shapes
  - 7.5.2. Development
  - 7.5.3. Poses and Expressions
- 7.6. Fairy-tale Beings
  - 7.6.1. Human Anatomy
  - 7.6.2. Construction
  - 7.6.3. Poses and Expressions
- 7.7. Hybrid
  - 7.7.1. Basics
  - 7.7.2. Design
  - 7.7.3. Poses and Expressions
- 7.8. Demon Beings
  - 7.8.1. Anatomy
  - 7.8.2. Design
  - 7.8.3. Poses and Expressions
- 7.9. Gods and Demigods
  - 7.9.1. Human Anatomy
  - 7.9.2. Construction
  - 7.9.3. Poses and Expressions
- 7.10. Other Fantastical Creatures
  - 7.10.1. Examples:
  - 7.10.2. Construction
  - 7.10.3. Poses and Expressions

## Module 8. Horror Characters

- 8.1. Vampires
  - 8.1.1. Human Anatomy
  - 8.1.2. Design
  - 8.1.3. Poses and Expressions
- 8.2. Frankenstein's Monster
  - 8.2.1. Anatomy
  - 8.2.2. Construction
  - 8.2.3. Poses and Expressions





- 8.3. Werewolf
  - 8.3.1. Compared Anatomy
  - 8.3.2. Construction
  - 8.3.3. Poses and Expressions
- 8.4. Mummy
  - 8.4.1. Human Anatomy
  - 8.4.2. Design
  - 8.4.3. Poses and Expressions
- 8.5. Swamp Monster
  - 8.5.1. Anatomy
  - 8.5.2. Construction
  - 8.5.3. Poses and Expressions
- 8.6. Ghosts
  - 8.6.1. Examples:
  - 8.6.2. Construction
  - 8.6.3. Poses and Expressions
- 8.7. Zombies
  - 8.7.1. Human Anatomy
  - 8.7.2. Animal Zombies
  - 8.7.3. Construction and Poses
- 8.8. Dr. Jekyll and Mr. Hyde
  - 8.8.1. Human Anatomy
  - 8.8.2. Construction
  - 8.8.3. Poses and Expressions
- 8.9. Death
  - 8.9.1. Anatomy
  - 8.9.2. Construction
  - 8.9.3. Poses and Expressions
- 8.10. Aliens and Beings from Other Dimensions
  - 8.10.1. Geometric Shapes
  - 8.10.2. Design
  - 8.10.3. Poses and Expressions

## Module 9. Color

- 9.1. Color Bases
  - 9.1.1. Primary, Secondary and Tertiary Colors
  - 9.1.2. Digital Color and the Problem of Color in Different Screens and Displays
  - 9.1.3. Color and Pigmentation
- 9.2. Color Theory
  - 9.2.1. The Color Wheel and its Scales
  - 9.2.2. CMYK and RGB
  - 9.2.3. Hexadecimal Pantone
- 9.3. Light Theory
  - 9.3.1. Light and its Effects
  - 9.3.2. Schemes in Animated Cinema
  - 9.3.3. Physical Qualities of Color
- 9.4. Chromatic Relationships
  - 9.4.1. Temperature
  - 9.4.2. Contrast, Balance
  - 9.4.3. Perception. Synesthesia
- 9.5. Contrasts and Harmonies
  - 9.5.1. Visual Weight of Color
  - 9.5.2. Color and Music
  - 9.5.3. Harmonies and Equivalents
- 9.6. Psychology, Symbolism and Metaphor of Color
  - 9.6.1. Emotional and Symbolic Color
  - 9.6.2. The Meaning of Color in Different Cultures
  - 9.6.3. Goethe's Theory of Color
- 9.7. The Color of Narration
  - 9.7.1. Color Analysis in Different Narrations
  - 9.7.2. Color Script
  - 9.7.3. Project
- 9.8. Color of Characters in the Background
  - 9.8.1. Ambience
  - 9.8.2. Contrasts
  - 9.8.3. Color Palettes

- 9.9. Digital Application
  - 9.9.1. Layers
  - 9.9.2. Filters
  - 9.9.3. Texture
- 9.10. Lighting
  - 9.10.1. Light
  - 9.10.2. Shade
  - 9.10.3. Brightness

## Module 10. Videogames and Characters

- 10.1. Characters and Videogames
  - 10.1.1. Analysis of Characters in Videogames
  - 10.1.2. Target of the Character
  - 10.1.3. References
- 10.2. Types
  - 10.2.1. 2D-3D
  - 10.2.2. Platforms and Types
  - 10.2.3. Pixelated Characters
- 10.3. Methodology
  - 10.3.1. Planning of Work and Types of Documents
  - 10.3.2. Analytical Animation
  - 10.3.3. Line Draughtsman and Shape Draughtsman
- 10.4. Define a Style
  - 10.4.1. References and Key Points
  - 10.4.2. Light and Color: Creating an Atmosphere
  - 10.4.3. Characters: Personality and Consistency
- 10.5. Traditional 2D
  - 10.5.1. References
  - 10.5.2. Creation
  - 10.5.3. *Model Sheet* Package
- 10.6. Cut Out I
  - 10.6.1. References
  - 10.6.2. Methodology
  - 10.6.3. Construction

- 10.7. Cut Out II
  - 10.7.1. Color
  - 10.7.2. Rig
  - 10.7.3. Libraries
- 10.8. 3D
  - 10.8.1. References
  - 10.8.2. Design
  - 10.8.3. Construction
- 10.9. Pixelated Characters
  - 10.9.1. References and Documentation
  - 10.9.2. Design
  - 10.9.3. Poses
- 10.10. Reference for the 3D Model
  - 10.10.1. Color Palettes
  - 10.10.2. Texture
  - 10.10.3. Light and Shade

## Module 11. Anatomy

- 11.1. General Skeletal Masses, Proportions
  - 11.1.1. Bones
  - 11.1.2. The Human Face
  - 11.1.3. Anatomical Canons
- 11.2. Anatomical Differences between Genders and Sizes
  - 11.2.1. Shapes Applied to Characters
  - 11.2.2. Curves and Straight Lines
  - 11.2.3. Behavior of Bones, Muscles and Skin
- 11.3. Head
  - 11.3.1. The Skull
  - 11.3.2. Muscles of the Head
  - 11.3.3. Layers: Skin, Bone and Muscle Facial Expressions

- 11.4. The Torso
  - 11.4.1. Torso Musculature
  - 11.4.2. Central Axis of the Body
  - 11.4.3. Different Torsos
- 11.5. The Arms
  - 11.5.1. Joints: Shoulder, Elbow and Wrist
  - 11.5.2. Arm Muscle Behavior
  - 11.5.3. Detail of the Skin
- 11.6. Hand Sculpting
  - 11.6.1. Hand Bones
  - 11.6.2. Hand Muscles and Tendons
  - 11.6.3. Hand Skin and Wrinkles
- 11.7. Leg Sculpting
  - 11.7.1. Joints: Hip, Knee and Ankle
  - 11.7.2. Muscles of the Leg
  - 11.7.3. Detail of the Skin
- 11.8. The Feet
  - 11.8.1. Bone Construction for the Foot
  - 11.8.2. Foot Muscles and Tendons
  - 11.8.3. Foot Skin and Wrinkles
- 11.9. Whole Human Figure Composition
  - 11.9.1. Complete Creation of a Human Base
  - 11.9.2. Joint and Muscle Attachment
  - 11.9.3. Skin Composition, Pores and Wrinkles
- 11.10. Complete Human Model
  - 11.10.1. Model Polishing
  - 11.10.2. Hyper Skin Detail
  - 11.10.3. Composition

## Module 12. Retopology and Maya Modeling

- 12.1. Advanced Facial Retopology
  - 12.1.1. Importing into Maya and the Use of Quad Draw
  - 12.1.2. Retopology of the Human Face
  - 12.1.3. Loops
- 12.2. Human Body Retopology
  - 12.2.1. Creation of Loops in the Joints
  - 12.2.2. Ngons and Tris and When to Use Them
  - 12.2.3. Topology Refinement
- 12.3. Retopology of Hands and Feet
  - 12.3.1. Movement of Small Joints
  - 12.3.2. Loops and Support Edges to Improve the Mesh Base of Feet and Hands
  - 12.3.3. Difference of Loops for Different Hands and Feet
- 12.4. Differences Between Maya Modeling vs. ZBrush Sculpting
  - 12.4.1. Different Workflows for Modeling
  - 12.4.2. Low Poly Base Model
  - 12.4.3. High Poly Model
- 12.5. Creation of a Human Model from Scratch in Maya
  - 12.5.1. Human Model Starting From the Hip
  - 12.5.2. General Base Form
  - 12.5.3. Hands and Feet and their Topology
- 12.6. Transformation of Low Poly Model to High Poly
  - 12.6.1. ZBrush
  - 12.6.2. High Poly: Differences Between Divide and Dynamesh
  - 12.6.3. Sculpting Form: Alternation Between Low Poly and High Poly
- 12.7. Detail Application in ZBrush: Pores, Capillaries, etc
  - 12.7.1. Alphas and Different Brushes
  - 12.7.2. Detail: Dam-Standard Brush
  - 12.7.3. Projections and Surfaces in ZBrush
- 12.8. Advanced Eye Creation in Maya
  - 12.8.1. Creation of the Spheres: Sclera, Cornea and Iris
  - 12.8.2. Lattice Tool
  - 12.8.3. Displacement Map from ZBrush

- 12.9. Use of Deformers in Maya
  - 12.9.1. Maya Deformers
  - 12.9.2. Topology Movement: Polish
  - 12.9.3. Polishing of the Final Mesh
- 12.10. Creation of Final UVs and Application of Displacement Mapping
  - 12.10.1. UVs of the Character and Importance of Sizes
  - 12.10.2. Texturing
  - 12.10.3. Displacement Map

## Module 13. UVs and Texturing with Allegorithmic Substance Painter and Mari

- 13.1. Creation of High-Level UVs in Maya
  - 13.1.1. Facial UVs
  - 13.1.2. Creation and Layout
  - 13.1.3. Advanced UV
- 13.2. UV Preparation for UDIM Systems Focused on High Throughput Models
  - 13.2.1. UDIM
  - 13.2.2. UDIM in Maya
  - 13.2.3. Textures in 4K
- 13.3. XYZ Textures: What They Are and How to Use Them
  - 13.3.1. XYZ. Hyperrealism
  - 13.3.2. MultiChannel Maps
  - 13.3.3. Texture Maps
- 13.4. Texturing: Video Games and Film
  - 13.4.1. Substance Painter
  - 13.4.2. Mari
  - 13.4.3. Types of Texturing
- 13.5. Texturing in Substance Painter for Videogames
  - 13.5.1. Bakear from High to Low Poly
  - 13.5.2. PBR Textures and Their Importance
  - 13.5.3. ZBrush with Substance Painter
- 13.6. Finalizing our Substance Painter Textures
  - 13.6.1. Scattering, Translucency
  - 13.6.2. Model Texturing
  - 13.6.3. Scars, Freckles, Tattoos, Paints or Makeup

- 13.7. Hyper-Realistic Facial Texturing with XYZ Textures and Color Mapping I
  - 13.7.1. XYZ Textures in ZBrush
  - 13.7.2. Wrap
  - 13.7.3. Correction of Errors
- 13.8. Hyper-Realistic Facial Texturing with XYZ Textures and Color Mapping II
  - 13.8.1. Mari's Interface
  - 13.8.2. Texturing in Mari
  - 13.8.3. Projection of Skin Textures
- 13.9. Advanced Detailing of Displacements Maps in ZBrush and Mari
  - 13.9.1. Texture Painting
  - 13.9.2. Displacement for Hyperrealism
  - 13.9.3. Creation of Layers
- 13.10. Shading and Texture Implementation in Maya
  - 13.10.1. Skin Shaders in Arnold
  - 13.10.2. Hyper-realistic Eye
  - 13.10.3. Touch-ups and Tips

## Module 14. Rendering, Lighting and Posing of Models

- 14.1. Characters Posing in ZBrush
  - 14.1.1. Rig in ZBrush with ZSpheres
  - 14.1.2. Transpose Master
  - 14.1.3. Professional Finish
- 14.2. Rigging and Weighting of our Own Skeleton in Maya
  - 14.2.1. Rig in Maya
  - 14.2.2. Rigging Tools with Advanced Skeleton
  - 14.2.3. Rig Weighting
- 14.3. Blend Shapes to Give Life to Your Character's Face
  - 14.3.1. Facial Expressions
  - 14.3.2. Blend Shapes of Maya
  - 14.3.3. Animation with Maya

- 14.4. Mixamo, a Quick Way to Present Our Model
  - 14.4.1. Mixamo
  - 14.4.2. Mixamo Rigs
  - 14.4.3. Animations
- 14.5. Lighting Concepts
  - 14.5.1. Lighting Techniques
  - 14.5.2. Light and Color
  - 14.5.3. Shade
- 14.6. Arnold Render Lights and Parameters
  - 14.6.1. Lights with Arnold and Maya
  - 14.6.2. Lighting Control and Parameters
  - 14.6.3. Arnold Parameters and Configuration
- 14.7. Lighting of our Models in Maya with Arnold Render
  - 14.7.1. Lighting Set Up
  - 14.7.2. Model Lighting
  - 14.7.3. Mixing Light and Color
- 14.8. Going Deeper in Arnold: Denoising and the Different AOV's
  - 14.8.1. AOVs
  - 14.8.2. Advanced Noise Treatment
  - 14.8.3. Denoiser
- 14.9. Real-Time Rendering in Marmoset Toolbag
  - 14.9.1. Real-Time vs. Ray Tracing
  - 14.9.2. Advanced Marmoset Toolbag
  - 14.9.3. Professional Presentation
- 14.10. Post-Production Rendering in Photoshop
  - 14.10.1. Image Processing
  - 14.10.2. Photoshop: Levels and Contrasts
  - 14.10.3. Layers: Characteristics and their Effects

## Module 15. Hair Creation for Video Games and Movies

- 15.1. Differences Between Videogame Hair and Film Hair
  - 15.1.1. FiberMesh and Cards
  - 15.1.2. Tools for Hair Creation
  - 15.1.3. Hair Software
- 15.2. ZBrush Hair Sculpting
  - 15.2.1. Basic Shapes for Hairstyles
  - 15.2.2. Creating Brushes in ZBrush for Hair
  - 15.2.3. Curve Brushes
- 15.3. Hair Creation in XGen
  - 15.3.1. XGen
  - 15.3.2. Collections and Descriptions
  - 15.3.3. Hair vs. Grooming
- 15.4. XGen Modifiers: Adding Realism to Hair
  - 15.4.1. Clumping
  - 15.4.2. Coil
  - 15.4.3. Hair Guides
- 15.5. Color and Region Maps:: for Absolute Hair Control
  - 15.5.1. Maps of Hair Regions
  - 15.5.2. Cuts: Curly, Shaved and Long Hair
  - 15.5.3. Micro Detail: Facial Hair
- 15.6. Advanced XGen: Use of Expressions and Refinement
  - 15.6.1. Expressions
  - 15.6.2. Utilities
  - 15.6.3. Hair Refinement
- 15.7. Cards Placement in Maya for Videogame Modeling
  - 15.7.1. Fibers in Cards
  - 15.7.2. Cards by Hand
  - 15.7.3. Cards and Real-Time Engine
- 15.8. Optimization for Movies
  - 15.8.1. Optimization of the Hair and its Geometry
  - 15.8.2. Preparation for Physics with Movements
  - 15.8.3. XGen Brushes

- 15.9. Hair Shading
  - 15.9.1. Arnold Shader
  - 15.9.2. Hyper-Realistic Look
  - 15.9.3. Hair Treatment
- 15.10. Render
  - 15.10.1. Rendering When Using XGen
  - 15.10.2. Lighting
  - 15.10.3. Noise Elimination

## Module 16. Clothing Simulation

- 16.1. Importing your Model to Marvelous Designer and Program Interface
  - 16.1.1. Marvelous Designer
  - 16.1.2. Software Functionality
  - 16.1.3. Real-Time Simulations
- 16.2. Creation of Simple Patterns and Clothing Accessories
  - 16.2.1. Creations: T-shirts, Accessories, Hats and Pockets
  - 16.2.2. Fabric
  - 16.2.3. Patterns, Zippers and Seams
- 16.3. Advanced Clothing Creation: Complex Patterns
  - 16.3.1. Pattern Complexity
  - 16.3.2. Physical Qualities of Fabrics
  - 16.3.3. Complex Accessories
- 16.4. Clothing Simulation at Marvelous
  - 16.4.1. Animated Models at Marvelous
  - 16.4.2. Fabric Optimization
  - 16.4.3. Model Preparation
- 16.5. Export of Clothing from Marvelous Designer to ZBrush
  - 16.5.1. Low Poly in Maya
  - 16.5.2. UVs in Maya
  - 16.5.3. ZBrush, Use of Reconstruct Subdiv
- 16.6. Refinement of Clothing
  - 16.6.1. Workflow
  - 16.6.2. Details in ZBrush
  - 16.6.3. Clothing Brushes in ZBrush



- 16.7. Improve the Simulation with ZBrush
  - 16.7.1. From Tris to Quads
  - 16.7.2. UV Maintenance
  - 16.7.3. Final Carving
- 16.8. High Detail Clothing Texturing in Mari
  - 16.8.1. Tileable Textures and Fabric Materials
  - 16.8.2. Baking
  - 16.8.3. Texturing in Mari
- 16.9. Maya Fabric Shading
  - 16.9.1. Shading
  - 16.9.2. Textures Created in Mari
  - 16.9.3. Realism with Arnold Shaders
- 16.10. Render
  - 16.10.1. Clothing Rendering
  - 16.10.2. Illumination in Clothing
  - 16.10.3. Texture Intensity

## Module 17. Stylized Characters

- 17.1. Choice of a Stylized Character and Blocking of Base Forms
  - 17.1.1. References and Concept Arts
  - 17.1.2. Base Forms
  - 17.1.3. Deformities and Fantastic Shapes
- 17.2. Conversion of our Low Poly to High Poly model: Head, Hair and Face Sculpting
  - 17.2.1. Head Blocking
  - 17.2.2. New Hair Creation Techniques
  - 17.2.3. Improvements
- 17.3. Model Refinement: Hands and Feet
  - 17.3.1. Advanced Sculpting
  - 17.3.2. Refinement of General Shapes
  - 17.3.3. Shape Cleaning and Smoothing
- 17.4. Creation of Jaw and Teeth
  - 17.4.1. Creation of Human Teeth
  - 17.4.2. Increase its Polygons
  - 17.4.3. Fine Detailing of Teeth in ZBrush

- 17.5. Modeling Clothing and Accessories
  - 17.5.1. Types of Cartoon Clothing
  - 17.5.2. Zmodeler
  - 17.5.3. Applied Maya Modeling
- 17.6. Retopology and Clean Topology Creation from Scratch
  - 17.6.1. Retopology
  - 17.6.2. Loops According to the Model
  - 17.6.3. Optimization of the Mesh
- 17.7. UV Mapping and Baking
  - 17.7.1. UVs
  - 17.7.2. Substance Painter: Baking
  - 17.7.3. Polishing Bakeo
- 17.8. Texturing & Painting In Substance Painter
  - 17.8.1. Substance Painter: Texturing
  - 17.8.2. Hand Painted Cartoon Techniques
  - 17.8.3. Fill Layers with Generators and Masks
- 17.9. Lighting and Rendering
  - 17.9.1. Lighting of Our Character
  - 17.9.2. Color Theory and Presentation
  - 17.9.3. Substance Painter: Render
- 17.10. Posing and Final Presentation
  - 17.10.1. Diorama
  - 17.10.2. Posing Techniques
  - 17.10.3. Presentation of Models

## Module 18. Creature Modeling

- 18.1. Understanding Animal Anatomy
  - 18.1.1. Study of the Bones
  - 18.1.2. Proportions of an Animal Head
  - 18.1.3. Anatomic Differences
- 18.2. Anatomy of the Skull
  - 18.2.1. Animal Face
  - 18.2.2. Muscles of the Head
  - 18.2.3. Skin Layer, Over Bones and Muscles
- 18.3. Anatomy of the Spine and Thoracic Cage
  - 18.3.1. Animal Torso and Hip Musculature
  - 18.3.2. Central Axis of its Body
  - 18.3.3. Creation of Torsos in Different Animals
- 18.4. Animal Musculature
  - 18.4.1. Muscle
  - 18.4.2. Synergy Between Muscles and Bones
  - 18.4.3. Shapes of an Animal Body
- 18.5. Reptiles and Amphibians
  - 18.5.1. Reptilian Skin
  - 18.5.2. Small Bones and Ligaments
  - 18.5.3. Fine Detail
- 18.6. Mammals
  - 18.6.1. Fur
  - 18.6.2. Larger, Stronger Bones and Ligaments
  - 18.6.3. Fine Detail
- 18.7. Animals with Feathers
  - 18.7.1. Plumage
  - 18.7.2. Elastic and Light Bones and Ligaments
  - 18.7.3. Fine Detail

## 18.8. Analysis of the Jaw and Creation of Teeth

18.8.1. Animal Specific Teeth

18.8.2. Detailing of Teeth

18.8.3. Teeth in the Jaw Cavity

## 18.9. Creation of Fur, Fur for Animals

18.9.1. XGen in Maya: Grooming

18.9.2. XGen: Feathers

18.9.3. Render

## 18.10. Fantastic Animals

18.10.1. Fantastic Animal

18.10.2. Complete Modeling of the Animal

18.10.3. Texturing, Lighting and Rendering

# Module 19. Blender: A New Twist in the Industry

## 19.1. Blender vs. ZBrush

19.1.1. Advantages and Differences

19.1.2. Blender and the 3D Art Industry

19.1.3. Advantages and Disadvantages of Freeware

## 19.2. Blender Interface and Program Knowledge

19.2.1. Interface

19.2.2. Customization

19.2.3. Experimentation

## 19.3. Head Sculpting and Transpolation of Controls from ZBrush to Blender

19.3.1. The Human Face

19.3.2. 3D Sculpting

19.3.3. Blender Brushes

## 19.4. Full Body Sculpting

19.4.1. The Human Body

19.4.2. Advanced Techniques

19.4.3. Detail and Refinement

## 19.5. Retopology and UVs in Blender

19.5.1. Retopology

19.5.2. UVs

19.5.3. Blender UDIMS

## 19.6. From Maya to Blender

19.6.1. Hard Surface

19.6.2. Modifiers

19.6.3. Keyboard Shortcuts

## 19.7. Blender Tips & Tricks

19.7.1. Range of Possibilities

19.7.2. Geometry Nodes

19.7.3. Workflow

## 19.8. Nodes in Blender: Shading and Texture Placement

19.8.1. Nodal System

19.8.2. Shaders Through Nodes

19.8.3. Textures and Materials

## 19.9. Rendering in Blender with Cycles and Eevee

19.9.1. Cycles

19.9.2. Eevee

19.9.3. Lighting

## 19.10. Implementation of Blender in our Workflow as Artists

19.10.1. Implementation in the Workflow

19.10.2. Search for Quality

19.10.3. Types of Exports

## Module 20. Creation of Organic Environments in Unreal Engine

- 20.1. Unreal Engine Configuration and Project Organization
  - 20.1.1. Interface and Configuration
  - 20.1.2. Folder Organization
  - 20.1.3. Search for Ideas and References
- 20.2. Blocking an Environment in Unreal Engine
  - 20.2.1. Primary, Secondary and Tertiary PST Elements
  - 20.2.2. Scene Design
  - 20.2.3. Storytelling
- 20.3. Terrain Modeling: Unreal Engine and Maya
  - 20.3.1. Unreal Terrain
  - 20.3.2. Terrain Sculpting
  - 20.3.3. Heightmaps: Maya
- 20.4. Modeling Techniques
  - 20.4.1. Rock Sculpting
  - 20.4.2. Rock Brushes
  - 20.4.3. Cliffs and Optimization
- 20.5. Creation of Vegetation
  - 20.5.1. Speedtree Software
  - 20.5.2. Low-Poly Vegetation
  - 20.5.3. Unreal's Foliage System
- 20.6. Texturing in Substance Painter and Mari
  - 20.6.1. Stylized Terrain
  - 20.6.2. Hyper-realistic Texturing
  - 20.6.3. Tips and Guidelines





- 20.7. Photogrammetry
  - 20.7.1. Megascan Library
  - 20.7.2. Agisoft Metashape Software
  - 20.7.3. Model Optimization
- 20.8. Shading and Materials in Unreal Engine
  - 20.8.1. Blending of Textures
  - 20.8.2. Material Settings
  - 20.8.3. Final Touches
- 20.9. Lighting and Post-Production of our Environment in Unreal Engine
  - 20.9.1. Scene Look
  - 20.9.2. Types of Lights and Atmospheres
  - 20.9.3. Particles and Fog
- 20.10. Cinematic Rendering
  - 20.10.1. Camera Techniques
  - 20.10.2. Video and Screen Capture
  - 20.10.3. Presentation and Final Finishing

# 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 has been the most widely used learning system among the world's leading business schools for as long as they have existed. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question that you are presented with in the case method, an action-oriented learning method. Over the course of 4 years, you will be presented with multiple practical case studies. You will have to combine all your knowledge, and research, argue, and defend your 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 re-learn). Therefore, we combine each of these elements concentrically.

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

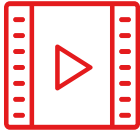
*Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.*

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

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



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



#### Study Material

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

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



#### Classes

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

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



#### Practising Skills and Abilities

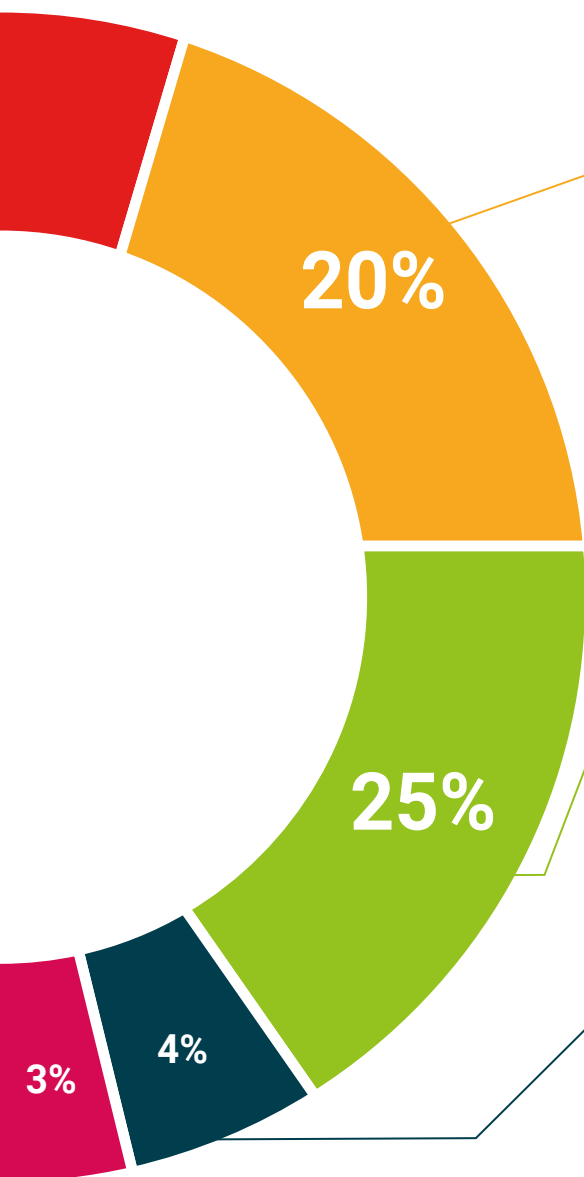
They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization we live in.



#### 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 Character Design for Video Games guarantees students, in addition to the most rigorous and up-to-date education, access to an Advanced Master's Degree issued by TECH Technological University.



“

*Successfully complete this program and  
receive your university qualification without  
having to travel or fill out laborious paperwork”*

This **Advanced Master's Degree in Characters Design for Video Games** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Advanced Master's Degree** issued by **TECH Technological University** via tracked delivery\*.

The diploma 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 career evaluation committees.

Title: **Advanced Master's Degree in Character Design for Video Games**

Official N° of Hours: **3,000 hours**.





## Advanced Master's Degree Character Design for Video Games

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

# Advanced Master's Degree

## Character Design for Video Games

