Hybrid Professional Master's Degree
3D Animation and Virtual Reality

tech technological university

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Hybrid Professional Master's Degree
3D Animation and
Virtual Reality

» Modality: **Hybrid (Online + Clinical Internship)**
» Duration: **12 months**
» Certificate: **TECH Technological University**
» Dedication: **16h/week**
» Schedule: **at your own pace**
» Exams: **online**

Website: **www.techtitute.com/in/videogames/hybrid-professional-masters-degree/hybrid-professional-3d-animation-virtual-reality**

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01
Introduction

The technology that allows the realization of augmented reality and 3D animation has progressed enormously in the last decade . A giant step led by Gamers with more eagerness for real immersion in video games. In this context, 3D programming in virtual environments grows in parallel, so it is a great time to specialize in a field with great projection. This qualification provides a 100% online theoretical methodology that facilitates learning and a practical stay that places students in a working environment surrounded by the best professionals in the sector.

Unreal Engine or Unity 3D programs will have no secrets for you thanks to this Hybrid Master's Degree"

The trend of video games using Virtual Reality or 3D animation has been growing in recent years. As a result, there is currently a market of millions of users, who spend many hours every day enjoying the best video games. A business that aims to maintain an optimal level of growth in the future.

Given this scenario, it is undeniable that professionals have a wide range of possibilities to develop in a booming sector. For this reason, TECH has created this Hybrid Master oriented towards professionals who want to impact users with their creations in 3D animation and Virtual Reality in the video game sector. In this competitive and highly creative environment, students will learn about the main graphics engines such as Unreal Engine or Unity 3D, from a theoretical perspective, through an advanced syllabus, and from a practical approach, through a stay in a leading studio in the sector.

Therefore, this course contains all the programs and software that a professional needs to achieve an excellent specialization. Therefore, through innovative multimedia material, students will learn how to create 3D models, their animation, and translation to virtual reality. In addition, they will acquire, guided by a specialized teaching team, the necessary technical skills to obtain quality results at the level required by the video game industry.

Once the theoretical learning is completed, you will enter a 100% practical phase, where you will be guided by the best experts in the field of 3D Animation and Virtual Reality. A stay in a programming and design studio, which will take you to know, first hand, the most used software and techniques currently used to achieve excellent designs.

A course, which offers students flexibility to access all the content of the study plan, while providing the opportunity to develop in a professional environment with real experts in three-dimensional animation and VR. A unique academic experience that only TECH offers.

This **Hybrid Professional Master's in 3D Animation and Virtual Reality** contains the most complete and up-to-date program on the market. The most important features of this course include:

- The development of 100 practical cases presented by experts in Design and Videogames
- 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
- The development of practical cases presented by Virtual Reality experts
- Practical exercises where self-assessment can be used to improve learning
- Special emphasis on 3D modeling and animation in virtual environments
- 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
- All of this will be complemented by 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
- Furthermore, you will be able to do an internship in one of the best videogame creative studios of the world

Add to your curriculum a Hybrid Master that will allow you to work with the best creative studios of the moment. Enroll now"

Take a 3 week intensive stay in a prestigious center and with professionals from the sector who will teach you all their tricks"

This Hybrid Master allows to exercise through practical cases, which provide a more authentic learning.

Update your knowledge in virtual environments with this Hybrid Master. Enroll now.

In this Hybrid Professional Master's Degree proposal, of a professionalizing nature and hybrid learning modality, the program is aimed at updating professionals in the design and creation of video games. The contents are based on the latest scientific evidence, and oriented in a didactic way to integrate theoretical knowledge in the design of 3D animation and virtual reality for video games, and theoretical-elements. They will facilitate the updating of knowledge and allow decision-making in its creation.

Thanks to its multimedia content developed with the latest educational technology, they will allow the Video Games professional to learn in a contextual and situated learning environment, i.e., a simulated environment that will provide immersive learning programmed to train in real situations. This program is designed around Problem-Based Learning, whereby the physician must try to solve the different professional practice situations that arise during the course. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

02

Why Study this Hybrid Professional Master's Degree?

Technological development has been key in the video game industry since its inception. Therefore, all programs that allow the creation of high quality animations or the most realistic immersion in virtual environments must be dominated by professionals. A reality, which TECH does not ignore and therefore has created this Hybrid Professional Master's Degree. A degree that will lead the professional to delve into the areas of art and 3D projects, programming, or development of immersive video games through a 100% online advanced theoretical framework , and a stay in a prestigious design studio. In this way, the professional will get a much more complete and recent vision of the advances of 3D animation and virtual reality, being guided throughout the process by authentic experts in the field.

TECH takes you to expand your professional frontiers through a Hybrid Professional Master's Degree, which has specialists in animation and creation of first level video games"

1. Updating from the Latest Technology Available

New technologies have permeated video games, revolutionizing the quality of designs, scenarios and favoring the immersion of the player in recent years. Therefore, and in order to bring this technology closer to the professional, TECH has created this program, which will lead the graduate to manage advances in this sector, from a theoretical-practical perspective of 3D animation and virtual reality.

2. Gaining In-depth Knowledge from the Experience of Top Specialists

The extensive team of professionals who will accompany the student during the practical phase is a guarantee of the excellent quality that this program has. With a tutor, the expert will master the most up-to-date creative strategies and techniques in 3D animation and virtual reality to significantly enhance their daily work methodology.

3. Entering first-class environments

TECH carries out a thorough selection process of all the teachers who teach their degrees, as well as of the companies where the students carry out the practical stay. In this way, the graduate who undergoes this qualification has the guarantee of being able to access a quality university degree that responds to their professional progression needs by obtaining the information necessary to advance in the world of 3D animation and Virtual Reality.
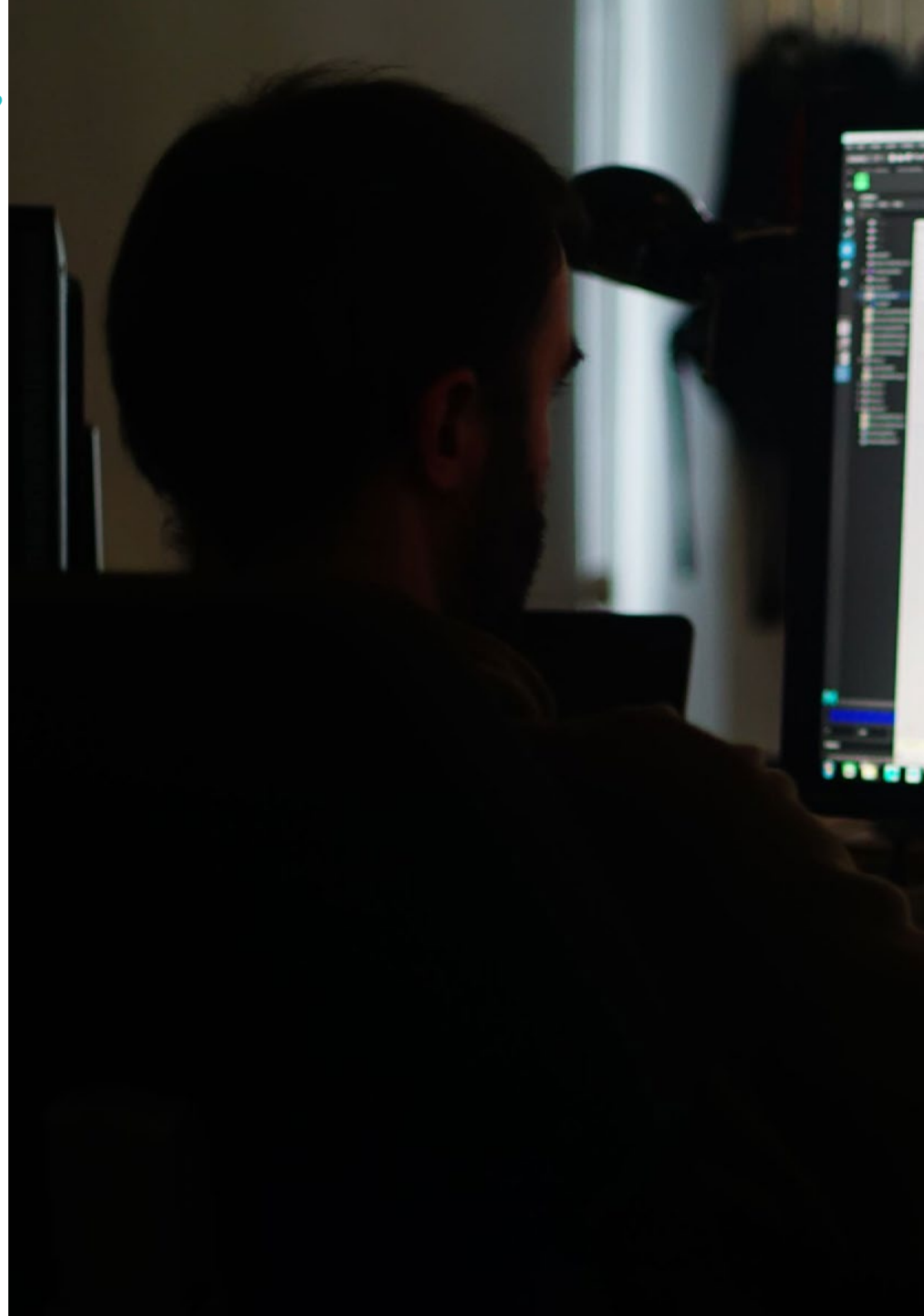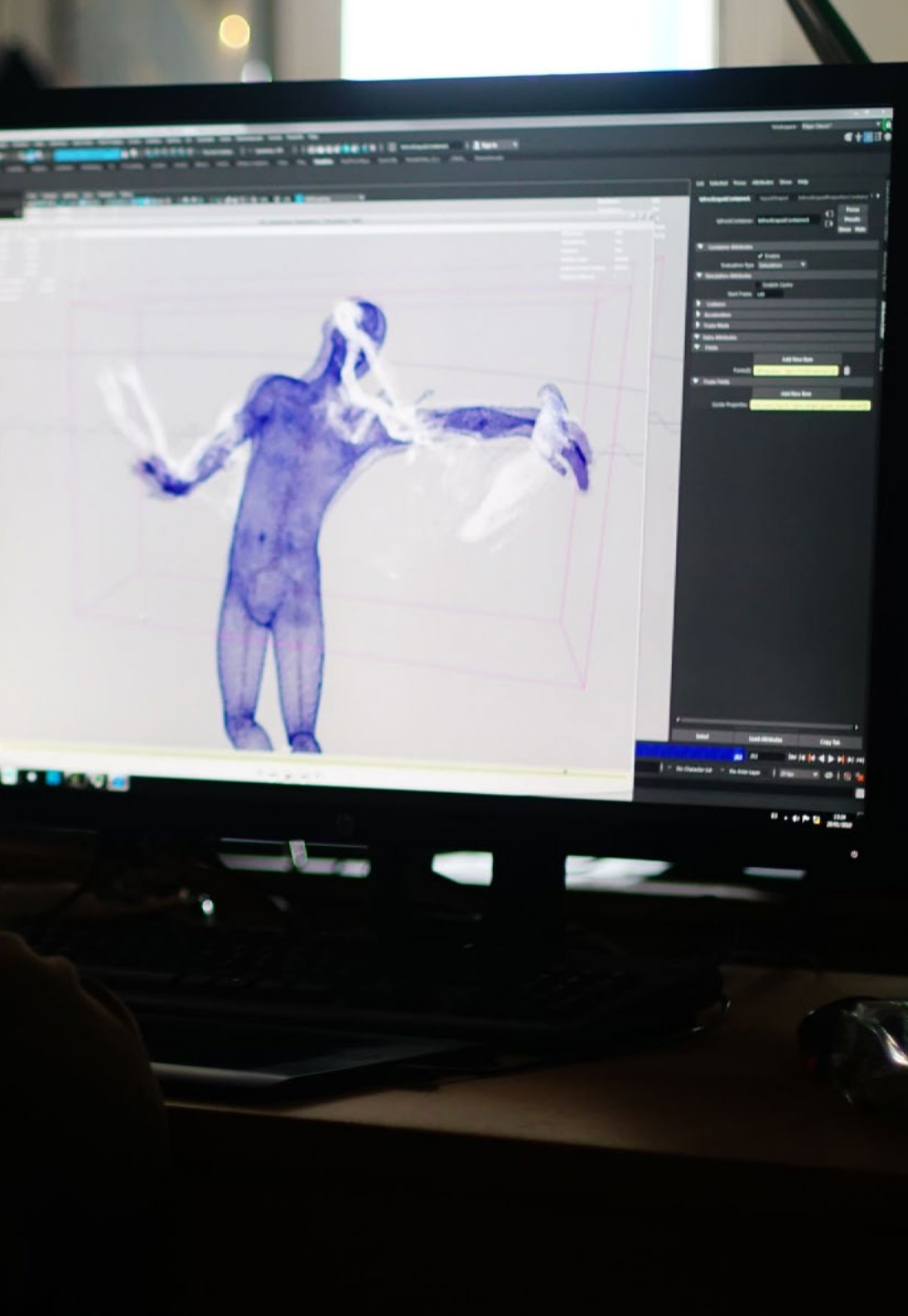
4. Combining the Best Theory with State-of-the-Art Practice

In this academic process, TECH has opted for an advanced curriculum taught in 100% online and in a flexible way, that is complemented by a fantastic practical experience in a prestigious studio in the field of programming and video game design. In this way, it combines the theoretical-practical approach necessary to advance professionally in this sector.

5. Expanding the Boundaries of Knowledge

With this course, the professional will get a much broader view of the video game industry, as well as the possibilities of expansion in a growing sector. This will be possible thanks to the learning of the best designers and creators of three-dimensional animations and virtual reality. A unique opportunity that only TECH, the largest online university in the world, could offer.

You will have full practical immersion at the center of your choice"

03
Objectives

This Hybrid Professional Master's Degree aims to analyze the industry of the virtual reality and video games sector, so that the professional is able to develop the most advanced technology to make computer-generated content, studying the most cutting-edge techniques in 3D modeling. The extensive multimedia content of this qualification and practical examples will be of great help in understanding the agenda.

With this program, you will be able to create 3D modeling projects from start to finish and with high quality. Click and enroll"

General Objective

- This course provides students with all the necessary tools to advance their professional career in virtual environments. Therefore, at the end of it, students will develop an advanced level of specialization to fit into any animation team, can successfully carry out VR projects, broaden specialized knowledge for project management from start to finish, determine the process of creating virtual reality projects, apply virtual reality across sectors and address any virtual reality project for both web and VR devices. The relearning system, based on the reiteration of content, will facilitate the consolidation of all this knowledge that will serve the daily practice of the professional

Specific Objectives

Module 1. The 3D Industry

- Examine the current state of the 3D industry, as well as its evolution over the last few years
- Generate specialized knowledge about the software commonly used within the industry to generate professional 3D content
- Determine the steps to develop this type of content through a *pipeline* adapted to the video game industry
- Analyze the most advanced 3D styles, as well as their differences, advantages and disadvantages for subsequent generation
- Integrate content developed in both the digital world (video games, VR, etc.) and the real world (AR, MR/XR)
- Establish the key points that differentiate a 3D project in the video game industry, cinema, TV series or the world of advertising
- Generate professional quality 3D *assets* using 3D Max and learn how to use the tool
- Maintain an organized workspace and maximize the efficiency of time spent generating 3D content

Module 2. Art and 3D in the Video Game Industry

- Examine 3D mesh creation and image editing software
- Analyze the possible problems and resolution in 3D VR projects
- Be able to define the aesthetic line for the generation of the artistic style of a video game
- Determine the reference sites for the search for aesthetics
- Assess the time constraints for the development of an artistic style
- Produce Assets and integrate them into a scenario
- Create characters and integrate them into a scenario
- Value the importance of audio and sounds of a video game

Module 3. Advanced 3D

- Master the most advanced 3D modeling techniques
- Develop the necessary knowledge for 3D texturing
- Export objects for 3D and Unreal Engine software
- Specialize students in digital sculpture
- Analyze the different digital sculpting techniques
- Research Character retopology
- Examine how to pose a character to loosen the 3D model
- Refine our work with advanced high-polygon modeling techniques

Module 4. 3D Animation

- Develop specialized knowledge in the use of 3D animation software
- Determine the similarities and differences between a biped and a quadruped
- Develop several animation cycles
- Internalizing LipSync, Rig facial
- Analyze the differences between animation made for film and for video games
- Develop customized skeletons
- Master camera and shot composition

Module 5. Unity 3D and Artificial Intelligence Proficiency

- Analyze decision history from the technological point of view of video game evolution
- Plan a sustainable and flexible technological development
- Generate specialized knowledge on Scripting and use of third party Plugins in the development of our content
- Implement physics and animation systems
- Master rapid prototyping and basic shape techniques for structuring scenes and study the proportions of Assets
- Delve into the specific techniques of advanced videogame programming
- Apply the knowledge acquired to develop video games with different technologies such as AR, AI, etc

Module 6. 2D and 3D Video Game Development

- Learn how to use raster graphic resources to integrate into 3D video games
- Implement interfaces and menus for 3D video games, easy to apply to VR environments
- Create versatile animation systems for professional video games
- Use Shaders and materials to give a professional finish
- Create and configure particle systems
- Use optimized lighting techniques to reduce the impact on game engine performance
- Generate professional quality VFX
- Know the different components to manage the different types of audio in a 3D video game

Module 7. Programming, Mechanics Generation and Video Game Prototyping Techniques

- Work with Low-poly and High-poly models in professional developments under Unity 3D environment
- Implement advanced functionalities and behaviors in video game characters
- Correctly import character animations into the working environment
- Control Ragdoll systems y skeletal meshes
- Master the available resources such as Asset libraries and functionalities and import them into the project configured by students
- Discover the key points of teamwork for technical professionals involved in 3D programming and animation
- Configure the project to export it correctly and ensure that it works correctly

Module 8. VR Immersive Game Development

- Determine the main differences between traditional video games and video games based on VR environments
- Modify interaction systems to adapt them to Virtual Reality
- Manage the physics engine to support player actions performed with VR devices
- Apply the development of UI elements to VR
- Integrate the developed 3D models into the VR scenario
- Configure avatars with the appropriate settings for a VR experience
- Optimize the VR project for its correct execution

Module 9. Professional Audio for 3D VR Video Games

- Analyze the different types of audio styles in video games and industry trends
- Examine methods for studying project documentation to build audio
- Study the main references in order to extract the key points of the sound identity
- Design the complete 3D video game sound identity
- Determine the key aspects of creating the video game soundtrack and sound effects for the project
- Develop the key aspects of working with voice actors and actresses and recording game voices
- Compile video game audio export methods and formats using current technologies
- Generate complete sound libraries to be marketed as professional asset packs for development studios

Module 10. Video Game Production and Financing

- Determine the differences between production methodologies prior to SCRUM and their evolution to the present day
- Apply Agile thinking to any development without losing project management
- Develop a sustainable framework for the entire team
- Anticipate production HR needs and develop a basic personnel cost estimate
- Conduct prior analysis to obtain key information for communication about the most important values of our project
- Support the project's sales and financing arguments with numbers that demonstrate the project's potential solvency
- Determine the necessary steps to approach Publishers and investors

You will get the keys to 3D Animation and Virtual Reality directly from expert professionals who work with this specialty every day"

04
Skills

The video game professional at the end of this Master will be able to develop and create virtual environments, objectives, and characters with optimal quality for inclusion in any major title in the gaming industry. This objective will be achieved thanks to the deep knowledge you will acquire in tools such as Unity, Unreal Engine, or those aimed at creating cinematics with Sequencer and Niagara. The mastery of all of them is highly valued in companies in the sector, so students have an excellent opportunity to progress.

Master the different stages of video game development and thrive in your professional career"

General Skills

- Obtain an in-depth knowledge of the 3D industry applied to video games
- Develop an advanced knowledge of the creation process of specializes 3D animation projects
- Generate Assets and 3D elements
- Create 3D animated elements
- Integrate Unity 3D generated content
- Apply a detailed pipeline tailored to today's industry needs
- Discover different styles of 3D art and their main advantages and disadvantages
- Know what the key factors are when it comes to applying the knowledge acquired to the video game, film and series industries and the world of advertising

Take your three-dimensional creations to the top, thanks to this Professional Hybrid Master's Degree in 3D Animation and Virtual Reality, created by TECH"
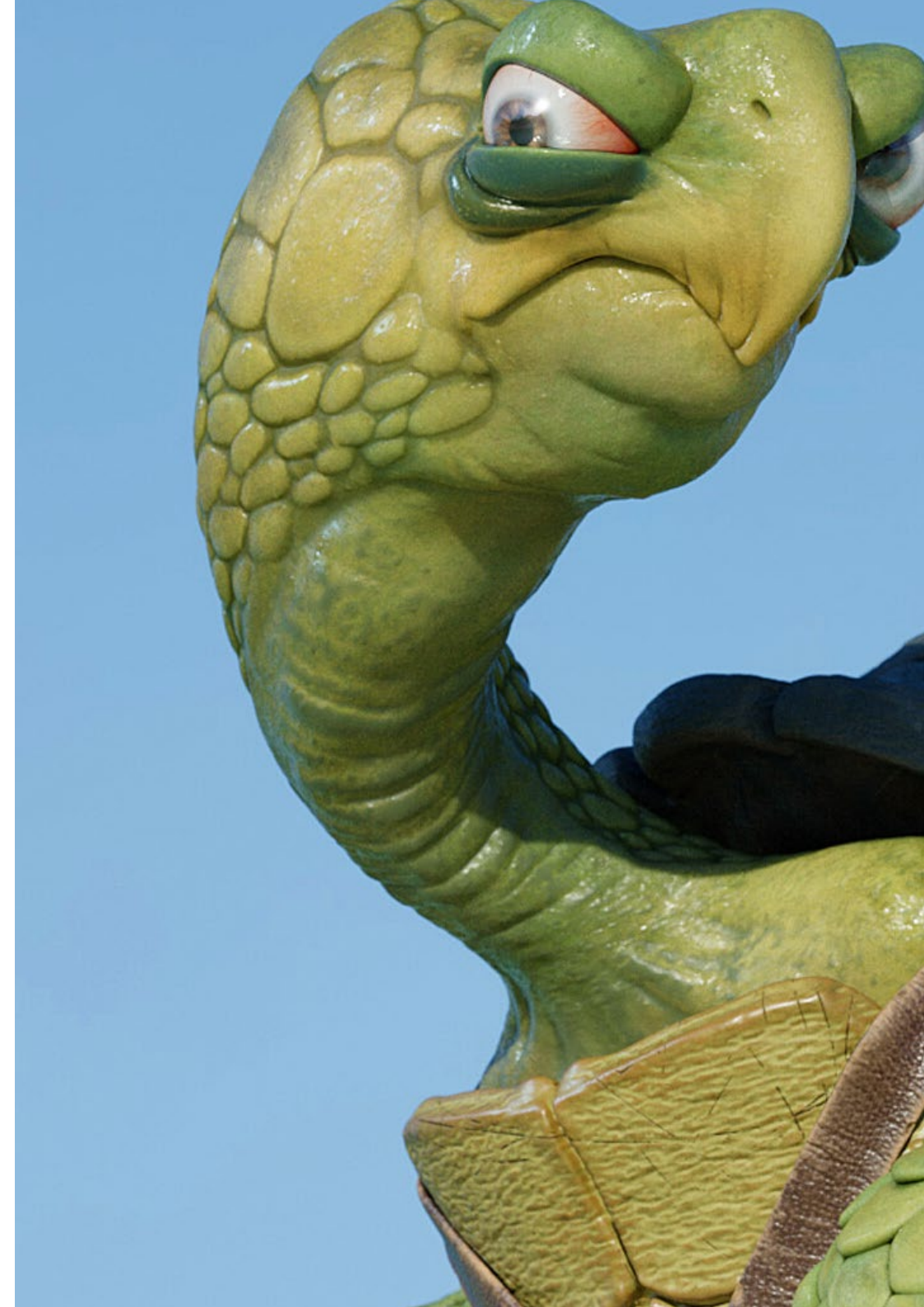
Specific Skills

- Master 3D Max

- Organize the workspace in a professional manner and apply a set of best practices, based on the teachers' experience in real companies

- Create interactive 3D scenarios, where you will be able to integrate the material created throughout the course

- Create animated 3D characters

- Delve into advanced texturing techniques, use of different types of brushes, etc.

- Specialize in Digital Sculpting with ZBrush

- Master the creation of cinematics

- Analyze the operation to create Facial Rigs, Lip Sync, etc.

- Use Unity 3D and Unreal Engine to test content created within a fully interactive game environment

- Generate prototypes of both 2D and 3D video games with mechanics and physics

- Develop prototypes for augmented reality and mobile devices

- Program artificial intelligence in an efficient way

- Apply Ragdoll simulation technology to characters

- Organize projects using an effective version control system

- Become familiar with the production process of these characteristics, as well as with the main notions of management

- Determine the reasons why agile methodologies are used in companies and professional development teams

05
Course Management

TECH has selected for this course a teaching team with extensive experience in the creation of 3D animation and virtual reality projects. Their knowledge in this field will be of vital help for students seeking to know the latest trends in the sector. Likewise, the academic qualification of the entire teaching team has been key to complete a panel of experts that, with closeness, bring the professional closer to a growing creative area.

"

A teaching team that has been immersed in projects of virtual environments will be your great ally in this Hybrid Master"

Management

Mr. Ortega Ordóñez, Juan Pablo

- Director of Engineering and Gamification Design for the Intervenía Group
- Professor at ESNE of Video Game Design, Level Design, Video Game Production, Middleware, Creative Media Industries, etc
- Advisor in the foundation of companies such as Avatar Games or Interactive Selection
- Author of the book Video Game Design
- Member of the Advisory Board of Nima World

Professors

Mr. Núñez Martín, Daniel

- Producer at Cateffects S.L.
- Music producer specialized in the composition and design of original music for audiovisual media and video games.
- Audio designer and music composer at Risin' Goat.
- Sound technician for audiovisual dubbing at SOUNDUB S.A.
- Content creator for the Talentum Master in Video Game Creation at Telefónica Educación Digital
- Higher Technician in Professional Sound Training from the Francisco de Vitoria University
- Intermediate Degree of Official Music Education by the Conservatorio Manuel de Falla, specializing in Piano and Saxophone

Mr. Pradana Sánchez, Noel

- Specialist in Rigging and 3D Animation for videogames
- 3D Graphic Artist at Dog Lab Studios
- Producer at Imagine Games leading the video game development team.
- Graphic artist at Wildbit Studios with 2D and 3D works.
- Teaching experience in ESNE and in the CFGS in 3D Animation: games and educational environments
- Masters Degree in Video Game Design and Development from ESNE University
- Master's Degree for Teachers by URJC
- Specialist in Rigging and 3D Animation Voxel School
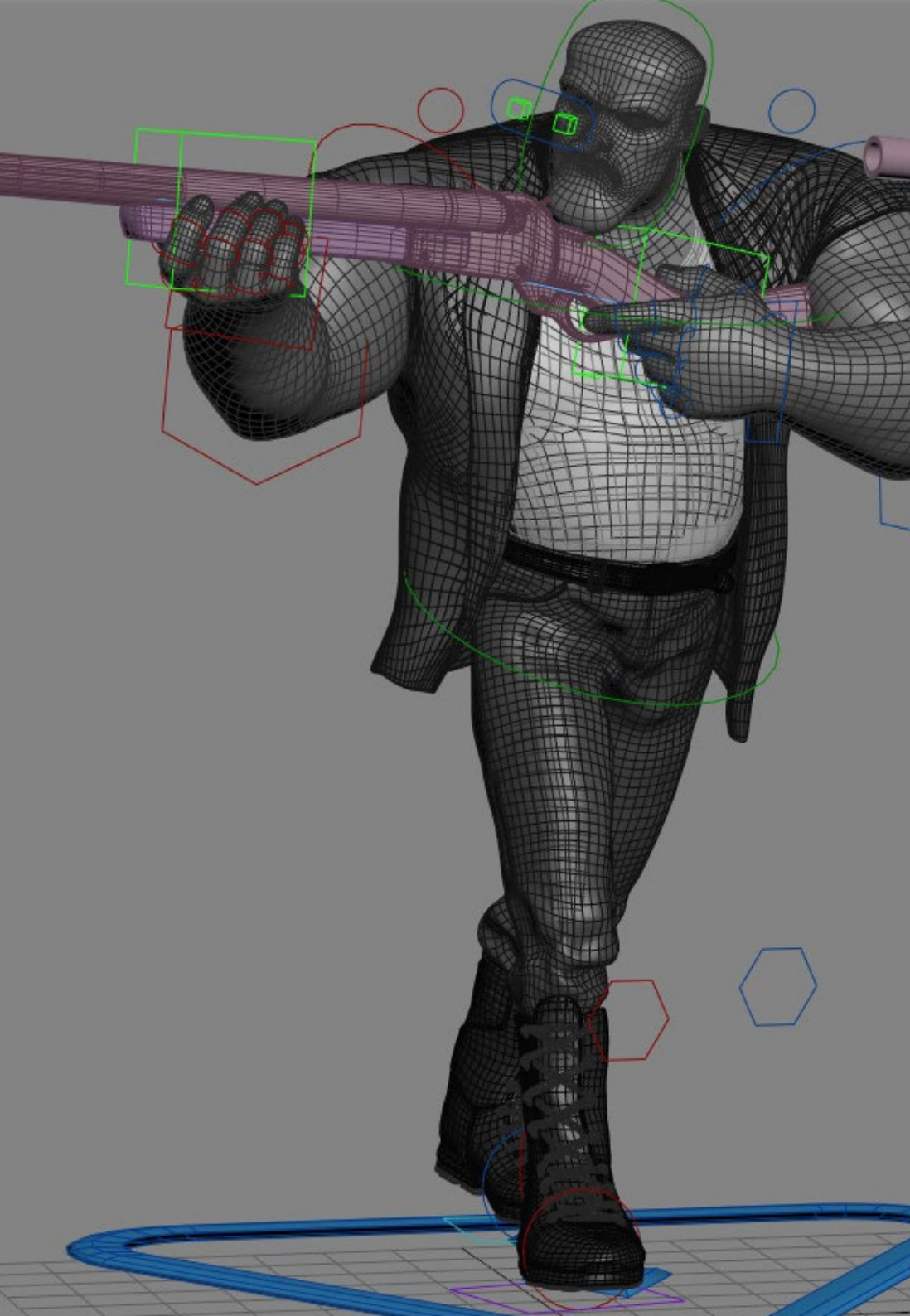
Mr. Martínez Alonso, Sergio
- Senior Unity Developer at NanoReality Games Ltd
- Lead Programmer and Game Designer at NoobO Games
- Teacher in several educational centers such as iFP, Implika or Rockbotic
- Programmer at Stage Clear Studios
- Professor at the University School of Design, Innovation and Technology
- Degree in Computer Engineering from the University of Murcia
- Professional Master's Degree in Video Game Design and Development from the University School of Design, Innovation and Technology

Mr. Ferrer Mas, Miquel
- Senior Unity Developer at Quantic Brains
- Lead programmer at Big Bang Box
- Co-founder and programmer of Videogames at Carbonbyte
- Audiovisual Programmer at Unkasoft Advergaming
- Videogame programmer at Enne
- Design Director at Bioalma
- Superior Technician in Computer Science at Na Camel-la
- Master's Degree in Video Game Programming by CICE
- Introduction to Deep Learning with PyTorch course by Udacity

Educational Plan

The syllabus of this Master's Degree has been designed by a teaching team that has developed a structure of the curriculum in 10 modules so that students can delve into each one of them in detail. In this way, the agenda addresses the fields related to 3D animation and computing, the main working methods, digital resources and forms of organization of teamwork in a creative studio. The tools and programs used will have their own section in this degree so that students acquire a more solid knowledge. The library of multimedia resources with video summaries of each topic and additional readings complement this title.

Learn directly, accompanied by professional 3D experts"

Module 1. The 3D Industry

Module 2. Art and 3D in the Video Game Industry

Module 3. Advanced 3D

3.1. Advanced 3D Modeling Techniques
  3.1.1   Interface Configuration
  3.1.2   Modeling Observation
  3.1.3   Modeling in High
  3.1.4   Organic Modeling for Videogames
  3.1.5   Advanced 3D Object Mapping
3.2. Advanced 3D Texturing
  3.2.1   Substance Painter Interfaces
  3.2.2   Materials, Alphas and Brush Use
  3.2.3   Particle Use
3.3. 3D Software and Unreal Engine Export
  3.3.1   Unreal Engine Integration in Designs
  3.3.2   3D Model Integration
  3.3.3   Unreal Engine Texture Application
3.4. Digital Sculpting
  3.4.1   DigitalSculpting with ZBrush
  3.4.2   First Steps in ZBrush
  3.4.3   Interface, Menus and Navigation
  3.4.4   Reference Images
  3.4.5   Full 3D Modeling of Objects in ZBrush
  3.4.6   Base Mesh Use
  3.4.7   Part Modeling
  3.4.8   3D Model Export in ZBrush
3.5. Polypaint Use
  3.5.1   Advanced Brushes
  3.5.2   Texture.
  3.5.3   Default Materials
3.6. Retopology
  3.6.1   Rheopology Use in the Video Game Industry
  3.6.2   Low-- Poly Mesh Creation
  3.6.3   Software Use for Rhetopology

3.7. 3D Model Positions
  3.7.1   Reference Image Viewers
  3.7.2   Transpose Use
  3.7.3   Transpose Use for Models Composed of Different Pieces
3.8. 3D Model Export
  3.8.1   3D Model Export
  3.8.2   Texture Generation for Exportation
  3.8.3   3D Model Configuration with the Different Materials and Textures
  3.8.4   Preview of the 3D Model
3.9. Advanced Working Techniques
  3.9.1   3D Modeling Workflow
  3.9.2   3D Modeling Work Process Organization
  3.9.3   Production Effort Estimates
3.10. Model Finalization and Export for Other Programs
  3.10.1   Workflow for Model Finalization
  3.10.2   Zpluging Exportation
  3.10.3   Possible Files. Advantages and Disadvantages.

Module 4. 3D Animation

4.1. Software Operation
  4.1.1   Information Management and Work Methodology
  4.1.2   Animation
  4.1.3   Timing and Weight
  4.1.4   Animation With Basic Objects
  4.1.5   Direct and Inverse Cinematics
  4.1.6   Inverse Kinematics
  4.1.7   Kinematic Chain
4.2. Anatomy. Biped Vs. Quadruped
  4.2.1   Biped
  4.2.2   Quadruped
  4.2.3   Walking Cycle
  4.2.4   Running Cycle

Module 5. UNITY 3D: Video Game Development, Virtual Reality and Artificial Intelligence

5.9. Artificial Intelligence Programming

    5.9.1 Artificial Intelligence Algorithms

    5.9.2 Finite State Machines

    5.9.3 Neural Networks

5.10. Distribution and Marketing

    5.10.1 The art of Publishing and Promoting a Video Game

    5.10.2 The Responsible for Success

    5.10.3 Strategies

Module 6. 2D and 3D Video Game Development

6.1. Raster Graphic Resources

    6.1.1 Sprites

    6.1.2 Atlas

    6.1.3 Texture.

6.2. Interface and Menu Development

    6.2.1 Unity GUI

    6.2.2 Unity UI

    6.2.3 UI Toolkit

6.3. Animation System

    6.3.1 Animation Curves and Keys

    6.3.2 Applied Animation Events

    6.3.3 Modifiers

6.4. Materials and Shaders

    6.4.1 Material Components

    6.4.2 RenderPass Types

    6.4.3 Shaders

6.5. Particles

    6.5.1 Particle Systems

    6.5.2 Transmitters and Sub-Transmitters

    6.5.3 Scripting

    6.5.4 Lighting

6.6. Lighting Modes

    6.6.1 Light Baking

    6.6.2 Light Probes

6.7. Mecanim

    6.7.1 State Machines, SubState Machines and Transitions between Animations

    6.7.2 Blend Trees

    6.7.3 Animation Layers and IK

6.8. Cinematic Finish

    6.8.1 Timeline

    6.8.2 Post-Processing Effects

    6.8.3 Universal Render Pipeline and High-Definition Render Pipeline

6.9. Advanced VFX

    6.9.1 VFX Graph

    6.9.2 Shader Graph

    6.9.3 Pipeline Tools

6.10. Audio Components

    6.10.1 Audio Source and Audio Listener

    6.10.2 Audio Mixer

    6.10.3 Audio Spatializer

Module 7. Programming, Mechanics Generation and Video Game Prototyping Techniques

7.1. Technical Process

    7.1.1 Low-Poly and High-Poly Models in Unity

    7.1.2 Material Settings

    7.1.3 High-Definition Render Pipeline

7.2. Character Design

    7.2.1 Movement

    7.2.2 Collider Design

    7.2.3 Creation and Behavior

Module 8. VR Immersive Game Development

8.9.   VR and AR Project Optimization

    8.9.1   Occlusion Culling

    8.9.2   Static Batching

    8.9.3   Quality Settings and Render Pass Types

8.10.   Practice: VR Escape Room

    8.10.1   Experience Design

    8.10.2   Scenario Layout

    8.10.3   Mechanic Development

Module 9. Professional Audio for 3D VR Video Games

9.1.   Professional 3D Video Games Audio

    9.1.1   Audio in Videogames

    9.1.2   Audio Style Types in Current Video Games

    9.1.3   Spatial Audio Models

9.2.   Preliminary Material Study

    9.2.1   Game Design Documentation Study

    9.2.2   Level Design Documentation Study

    9.2.3   Complexity and Typology Evaluation to Create Audio Projects

9.3.   Sound Reference Studio

    9.3.1   Main References List by Similarity with the Project

    9.3.2   Auditory References from Other Media to Give Video Games' Identity

    9.3.3   Reference Study and Drawing of Conclusions

9.4.   Sound Identity Design for Video Games

    9.4.1   Main Factors Influencing the Project

    9.4.2   Relevant Aspects in Audio Composition: Instrumentation, Tempo, etc.

    9.4.3   Voice Definition

9.5.   Soundtrack Creation

    9.5.1   Environment and Audio Lists

    9.5.2   Definition of Motif, Themes and Instrumentation

    9.5.3   Composition and Audio Testing of Functional Prototypes

9.6.   Sound Effect Creation (FX)

    9.6.1   Sound Effects: FX Types and Complete Lists According to Project Needs

    9.6.2   Definition of Motif, Themes and Creation

    9.6.3   Sound FX Evaluation and Functional Prototype Testing

9.7.   Voice Creation

    9.7.1   Voice Types and Phrase Listing

    9.7.2   Search and Evaluation of Voice Actors and Actresses

    9.7.3   Recording Evaluation and Testing of Voices on Functional Prototypes

9.8.   Audio Quality Evaluation

    9.8.1   Elaboration of Listening Sessions with the Development Team

    9.8.2   All Audio Integration into Working Prototypes

    9.8.3   Testing and Evaluation of the Results Obtained

9.9.   Project Exporting, Formatting and Importing Audio

    9.9.1   Video Game Audio Formats and Compression

    9.9.2   Exporting Audio

    9.9.3   Importing Project Audio

9.10.   Preparing Audio Libraries for Marketing

    9.10.1   Versatile Sound Library Design for Video Game Professionals

    9.10.2   Audio Selection by Type: Soundtrack, FX and Voices

    9.10.3   Audio Asset Library Marketing

Module 10. Video Game Production Analysis and Post-mortems

10.1.   Video Game Production

    10.1.1   Cascading Methodologies

    10.1.2   Case Studies on Lack of Project Management and Work Plan

    10.1.3   Consequences of the Lack of a Production Department in the Video Game Industry

10.2.   Development Teams

    10.2.1   Key Departments in Project Development

    10.2.2   Key Profiles in Micro-Management: LEAD and SENIOR

    10.2.3   Problems of Lack of Experience in JUNIOR Profiles

    10.2.4   Establishment of Training Plan for Low-Experience Profiles

10.3.   Agile Methodologies in Video Game Development

    10.3.1   SCRUM

    10.3.2   AGILE

    10.3.3   Hybrid Methodologies

You have the whole agenda for you to download and learn at your own pace. Enroll now"

07

Practices

Once the theoretical phase is over, which the students will have been able to complete in 100% online mode, the student will access the Practical Training phase. A stay where you can develop all the knowledge acquired together with professionals in the sector and in studios that create reference video games. In this way, the Hybrid Master will complete the extensive knowledge acquired.

Do your internship in a benchmark company in the sector. You will be acquiring a key knowledge for your professional career"

The Practical Training period of this 3D Animation and Virtual Reality program consists of a practical stay in a design and title creation studio for the gaming industry. During the 3 weeks of practical stay in the company, the student will be accompanied by professionals from the sector who will show them the latest news in virtual environments, as well as the application of the different techniques used for the modeling of objects and characters.

It is in this working environment, where the student will really check if they have been able to understand and assimilate the entire theoretical framework of this Hybrid Master's Degree. You will also have the opportunity to continue your learning with experts in the area. The teaching staff of this degree will continue their progress at this stage along with the students and will guide them to achieve their objectives.

In this qualification proposal, completely practical, activities are aimed at applying 3D animation techniques according to recreate virtual or real worlds, to organize, structure and create an animation project for video games, to develop projects from a creative and conceptual point of view, and to manage the main software development and creation of Virtual Reality.

" Through this program you can do the internship in a relevant study and complete a degree that will open the doors to the video game industry"

The procedures described below will be the basis of the practical part of the training, and their implementation will be subject to the center's own availability and workload, the proposed activities being the following:

Module	Practical Activity
The 3D Industry	Create a three-dimensional artistic style adapted to the needs of a video game
	Working with 3D Max to generate assets
	Organize the workspace and maintain good practices during the video game production process
	Follow the aesthetic line of a given project for a coherent cohesion of all the artistic assets of the same
Advanced 3D and 3D Animation	Integrate the Unreal Engine into 3D modeling and software jobs
	Configure the Substance Painter interface for advanced texturing of 3D modeling
	Create Low Poly meshes in retopology
	Use animation software with basic tasks and a working methodology developed
	Create 3D models with applied animation, following the principles of anatomy and facial rigging
	Perform the Setup of a skeleton, with body language, poses and editing sequences
Programming, Mechanics Generation and Video Game Prototyping Techniques	Develop the technical processes for creating Low Poly and High Poly models in Unity
	Import animations with the proper formatting and preparation to speed up the subsequent work
	Create animated characters through the management of resource libraries
	Edit animations, creating Blend Spaces and Animation Montage
VR Immersive Game Development	Correctly design physics in VR environments
	Integrating previously animated models into a virtual reality environment
	Design the sound identity of a videogame
	Get involved in the soundtrack creation process.
	Documenting audio libraries and sound effects repertoires

Civil Liability Insurance

This institution's main concern is to guarantee the safety of the trainees and other collaborating agents involved in the internship process at the company. Among the measures dedicated to achieve this is the response to any incident that may occur during the entire teaching-learning process.

To this end, this entity commits to purchasing a civil liability insurance policy to cover any eventuality that may arise during the course of the internship at the center.

This liability policy for interns will have broad coverage and will be taken out prior to the start of the practical training period. That way professionals will not have to worry in case of having to face an unexpected situation and will be covered until the end of the internship program at the center.

General Conditions of the Internship Program

The general terms and conditions of the internship agreement for the program are as follows:

1. TUTOR: During the Hybrid Professional Master's Degree, students will be assigned two tutors who will accompany them throughout the process, answering any doubts and questions that may arise. On the one hand, there will be a professional tutor belonging to the internship center who will have the purpose of guiding and supporting the student at all times. On the other hand, they will also be assigned an academic tutor whose mission will be to coordinate and help the students during the whole process, solving doubts and facilitating everything they may need. In this way, the student will be accompanied and will be able to discuss any doubts that may arise, both clinical and academic.

2. DURATION: The internship program will have a duration of three continuous weeks, in 8-hour days, 5 days a week. The days of attendance and the schedule will be the responsibility of the center and the professional will be informed well in advance so that they can make the appropriate arrangements.

3. ABSENCE: If the students does not show up on the start date of the Hybrid Professional Master's Degree, they will lose the right to it, without the possibility of reimbursement or change of dates. Absence for more than two days from the internship, without justification or a medical reason, will result in the professional's withdrawal from the internship, therefore, automatic termination of the internship. Any problems that may arise during the course of the internship must be urgently reported to the academic tutor.

4. CERTIFICATION: Professionals who pass the Hybrid Professional Master's Degree will receive a certificate accrediting their stay at the center.

5. EMPLOYMENT RELATIONSHIP: The Hybrid Professional Master's Degree shall not constitute an employment relationship of any kind.

6. PRIOR EDUCATION: Some centers may require a certificate of prior education for the Hybrid Professional Master's Degree. In these cases, it will be necessary to submit it to the TECH internship department so that the assignment of the chosen center can be confirmed.

7. DOES NOT INCLUDE: The Hybrid Professional Master's Degree will not include any element not described in the present conditions. Therefore, it does not include accommodation, transportation to the city where the internship takes place, visas or any other items not listed

However, students may consult with their academic tutor for any questions or recommendations in this regard. The academic tutor will provide the student with all the necessary information to facilitate the procedures in any case.

Where Can I Do the Internship?

This Hybrid Professional Master's Degree program includes a practical itinerary that will take place in creative studios and video game developers, selected by TECH to offer students a quality education. During the stay, students will have at their disposal equipment and programs used in the video game sector and according to the current demand of the gaming industry.

"Complete your knowledge with a Hybrid Professional Master's Degree in which a TECH teacher will be at your side to help you achieve your goals"

The student will be able to complete the practical part of this Hybrid Professional Master's Degree at the following centers:

Video Games

Pentakill Studios

Country
Spain

City
Valladolid

Address: C. Unión, 15, 47005 Valladolid

Pentakill Studios is a videogame studio created in Spain in 2021.

Related internship programs:
- 3D Animation and Virtual Reality

Video Games
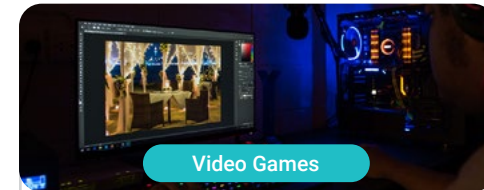
Happy Studio Creativos

Country
Mexico

City
Mexico City

Address: Limantitla 6A Santa Úrsula Xitla
Tlalpan 14420 CDMX

Creative company dedicated to the audiovisual world
and communication

Related internship programs:
Digital Photography
Audiovisual Screenwriting

09
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.

01
learning from evidence

02
relearning from evidence

03
testing

04
learning from an expert

05
neurocognitive context dependent learning

06
Von-Restorff effect

07
case based learning through storytelling

08
competencies testing (retesting)

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.

30%

10%

8%

20%

25%

4%

3%
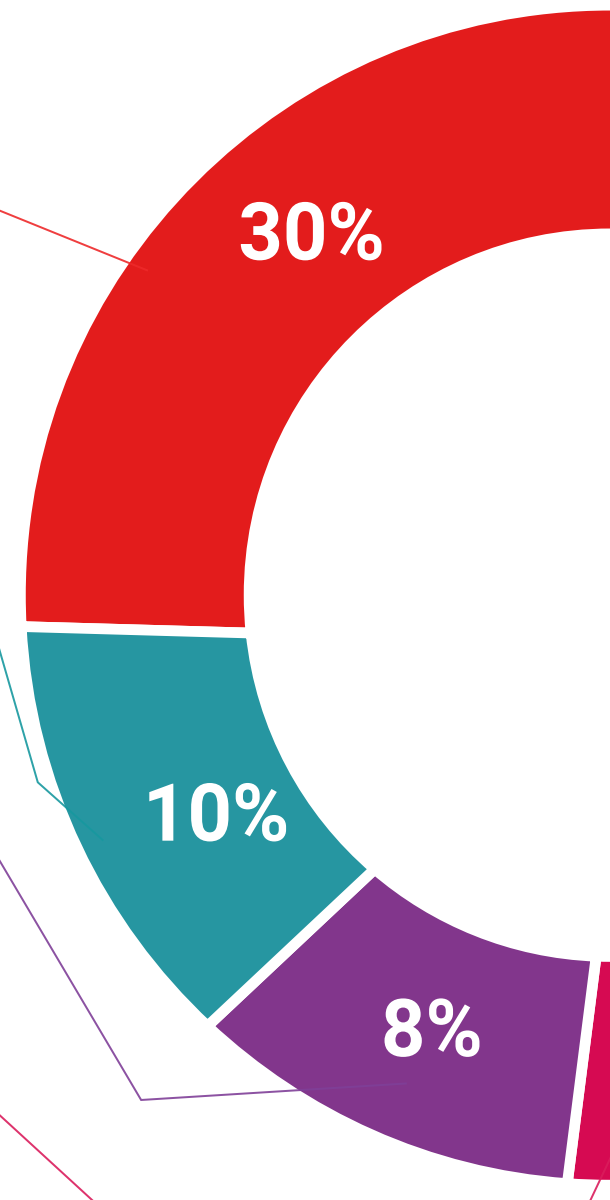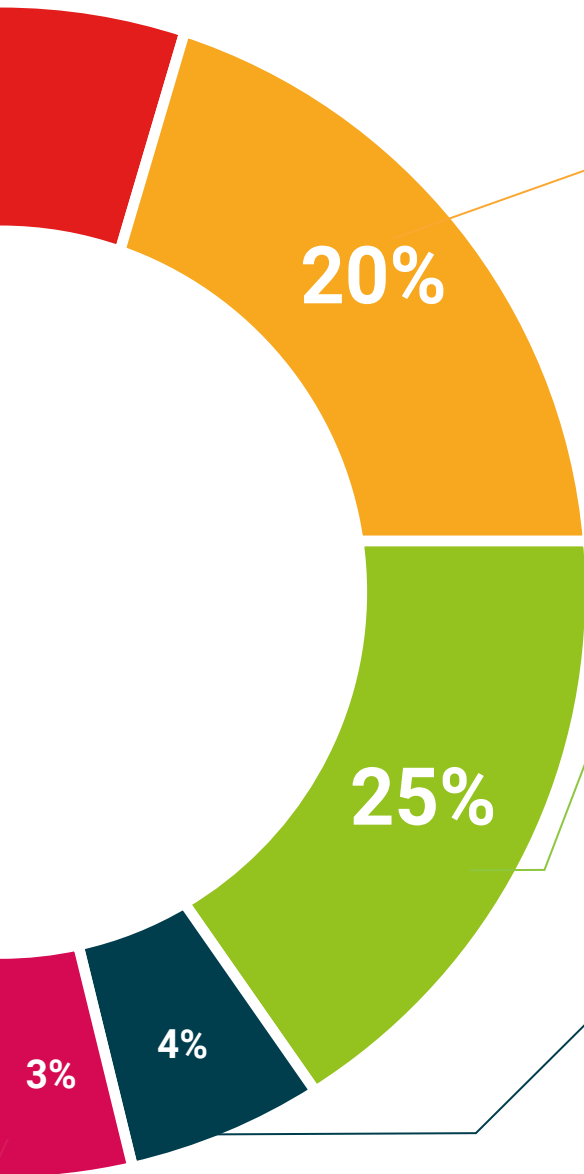
Case Studies

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.

10
Certificate

The Hybrid Professional Master's Degree in 3D Animation and Virtual Reality guarantees students, in addition to the most rigorous and up-to-date education, access to a Hybrid Professional Master's Degree diploma issued by TECH Technological University.

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

This **Hybrid Professional Master's Degree in 3D Animation and Virtual Reality** contains the most complete and up-to-date program on the professional and academic field.

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

In addition to the certificate, students will be able to obtain an academic transcript, as well as a certificate outlining the contents of the program. In order to do so, students should contact their academic advisor, who will provide them with all the necessary information.
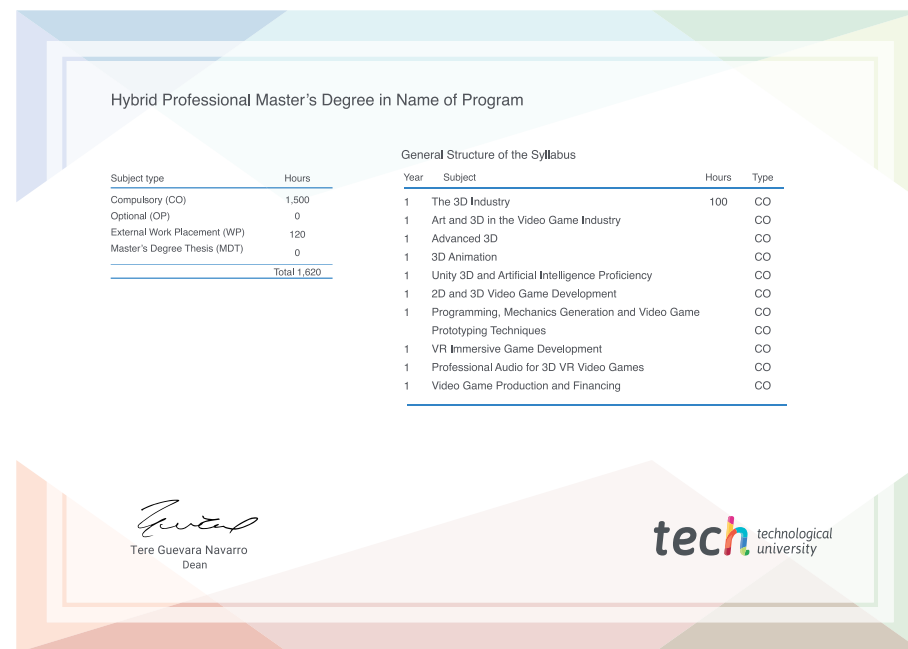
Title: **Professional Master's Degree Hybrid in 3D Animation and Virtual Reality**

Modality: **Hybrid (Online + Internship)**

Duration: **12 months.**

Certificate: **TECH Technological University**

Teaching Hours: **1,620 hours.**

tech technological university

Awards the following
CERTIFICATE
to

Mr./Ms. _____ with identification number _____.
For having successfully passed and accredited the following program

HYBRID PROFESSIONAL MASTER'S DEGREE
in

3D Animation and Virtual Reality

This is a qualification awarded by this University, with a duration of 1,620 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

Unique TECH Code: AFWORD23S   techtitute.com/certificates

Hybrid Professional Master's Degree in Name of Program

Subject type	Hours
Compulsory (CO)	1,500
Optional (OP)	0
External Work Placement (WP)	120
Master's Degree Thesis (MDT)	0
Total 1,620	

General Structure of the Syllabus

Year	Subject	Hours	Type
1	The 3D Industry	100	CO
1	Art and 3D in the Video Game Industry		CO
1	Advanced 3D		CO
1	3D Animation		CO
1	Unity 3D and Artificial Intelligence Proficiency		CO
1	2D and 3D Video Game Development		CO
1	Programming, Mechanics Generation and Video Game		CO
	Prototyping Techniques		CO
1	VR Immersive Game Development		CO
1	Professional Audio for 3D VR Video Games		CO
1	Video Game Production and Financing		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.

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Hybrid Professional Master's Degree
3D Animation and
Virtual Reality

» Modality: **Hybrid (Online + Clinical Internship)**
» Duration: **12 months**
» Certificate: **TECH Technological University**
» Dedication: **16h/week**
» Schedule: **at your own pace**
» Exams: **online**

Hybrid Professional Master's Degree
3D Animation and Virtual Reality

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