# Postgraduate Diploma

## 3D Modeling with 3D Studio Max

tech global university

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# Postgraduate Diploma

## 3D Modeling with 3D Studio Max

- Modality: **online**
- Duration: **6 months**
- Certificate: **TECH Global University**
- Accreditation: **18 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/de/design/postgraduate-diploma/postgraduate-diploma-3d-modeling-3d-studio-max

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01

# Introduction

In the digital design market there are an infinite number of programs that help professionals do an exceptional job and 3D Studio Max is one of them. This tool is ideal for any designer who wants to take his career to the next level, since its correct handling and use is a skill that companies appreciate. Therefore, this program will allow the student to know it perfectly, studying each interface and controls to edit depending on the modeling to be done. Also, the student will learn about the VRay graphic engine, which allows to give more detail to the model, without adding or changing the geometry.

*Through the 100% online mode of this program, you will be able to access the content you need to specialize in 3D Studio Max"*

3D Studio Max is perhaps the most widely used program by designers around the world. It can be used for modeling and animating characters, as well as rendering realistic images of buildings and objects. All professionals who use it agree that its speed, simplicity and efficiency are the reasons why they always work with this software. For this reason, specializing in it is indispensable for any designer nowadays.

In this TECH Postgraduate Diploma, *students will find* a complete, updated and practical content with which they *will be able* to achieve this objective. Therefore, the syllabus will begin by addressing the functionalities of the software, becoming familiar with the interface and the most important controls. They will also *learn* all kinds of editions with the program to make any modeling that *they* are asked to do.

Near the end of the syllabus, the subject of rendering modeling with the VRay engine, which is an extension of Autodesk and allows you to create hyper-realistic *Rends* with your own materials, will be covered. Therefore, it is essential that *students learn* how to change the basic settings of 3DS Max to work in VRay. Likewise, they *will learn* the tricks of modeling without having to change the geometry of the object, achieving a more rounded effect of the surface.

All this content will be available online, allowing students to organize their time and pace of learning according to their professional activities. In addition, thanks to the *Relearning*methodology, you obtain an educational itinerary that has the best pedagogical resources to guarantee the acquisition of the competences and skills necessary to succeed in the working world.

This **Postgraduate Diploma in 3D Modeling with 3D Studio Max** contains the most complete and up-to-date program on the market. The most important features include:

- The development of case studies presented by experts in 3D Modeling with 3D Studio Max
- The graphic, schematic, and practical contents with which they are created, provide practical information on the disciplines that are essential for professional practice
- Practical exercises where self-assessment can be used to improve learning.
- Its special emphasis on innovative methodologies
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Content that is accessible from any fixed or portable device with an Internet connection

*Through practical guides and didactic videos you will learn everything you need to render your 3D modeling projects"*

*Thanks to the 100% online mode of the program, you will be able to study where and when you prefer, without leaving your daily activities"*

*You can find the most current syllabus in the academic panorama at TECH. Enroll now and join the elite of your profession.*

The program's teaching staff includes professionals from the sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will allow *professionals* to learn in a contextual and situated learning environment, i.e., a simulated environment that will provide immersive education programmed to prepare in real situations.

The design of this program focuses on Problem-Based Learning, by means of which *professionals must* try to solve the different professional practice situations that arise during the academic year. For this *purpose, the students will be assisted by an innovative interactive video system created by* renowned and experienced experts.

*Smooth the surfaces of any object you work on and be a key part of any design team.*

02

# Objectives

*This Postgraduate Diploma* in 3D Modeling with 3D Studio Max contains all the tips and tricks that will help the student to master this program. Upon graduation, you will be able to use each tool to perfection, using 2D elements to create shapes more efficiently in 3D. Thanks to all this, you will be better positioned in the world of design, reaching more important jobs in a competitive market. You will even be able to start working independently, lending your skills in international projects.

*Reach new professional goals in the best design companies in the industry, perfecting your skills in the 3DS Max" program"*

## General Objectives

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

## Specific Objectives

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

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

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

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

### Module 3. Rendering with VRay Engine in 3DS Max

- In-depth knowledge of the Vray engine assigned to the 3DS Max program
- Configure rendering options to assign the ideal rendering engine
- Get to know VRay's own materials and work with them through nodes
- Migrate textures created in Substance Painter to VRay engine
- Configure the lighting of our VRay scene
- Give more details to our model without the need to change or add geometry
- Intelligently position our model and camera to create an interesting scene
- Make static and animated renders of 3D modeling

*Using 3DS Max to perfection is a job that requires a lot of practice and thanks to the didactic exercises in this Postgraduate Diploma, you will be able to achieve it"*

03

# Course Management

This program has been developed and designed by a group of experts of the highest prestige in the world of design. They are professionals of great value who put at the disposal *of the students* all their knowledge and years of experience. In addition, they will be responsible for leading the classes of each module, as well as providing the bibliographic and practical material in which each content of the program is evidenced in detail.

*Together with this group of experts of the highest level in the sector, you will learn all the tips and tricks they have perfected for the correct handling of 3DS Max"*

## Management

### Dr. Vidal Peig, Teresa

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

## Professors

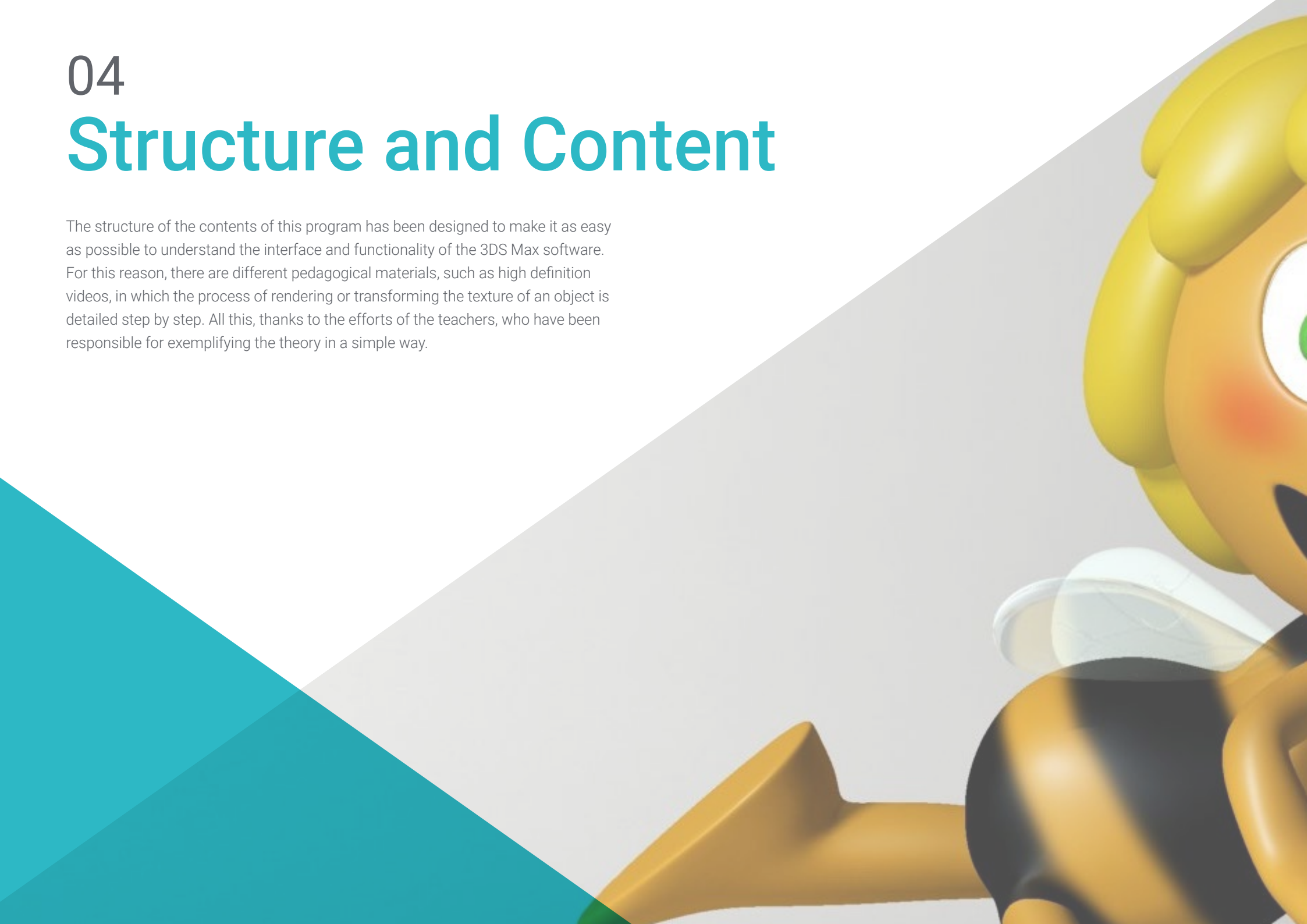
### Ms. Jiménez Vaquero, Laura

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

04

# Structure and Content

The structure of the contents of this program has been designed to make it as easy as possible to understand the interface and functionality of the 3DS Max software. For this reason, there are different pedagogical materials, such as high definition videos, in which the process of rendering or transforming the texture of an object is detailed step by step. All this, thanks to the efforts of the teachers, who have been responsible for exemplifying the theory in a simple way.



*This program will allow you to master the 3D modeling of textures by means of the most relevant program nowadays: 3D Studio Max"*

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

1.1. 3D Modeling with 3DS Max
- 1.1.1. Orbit, Viewers and Views
- 1.1.2. Geometry Display Modes
- 1.1.3. Steering Wheels

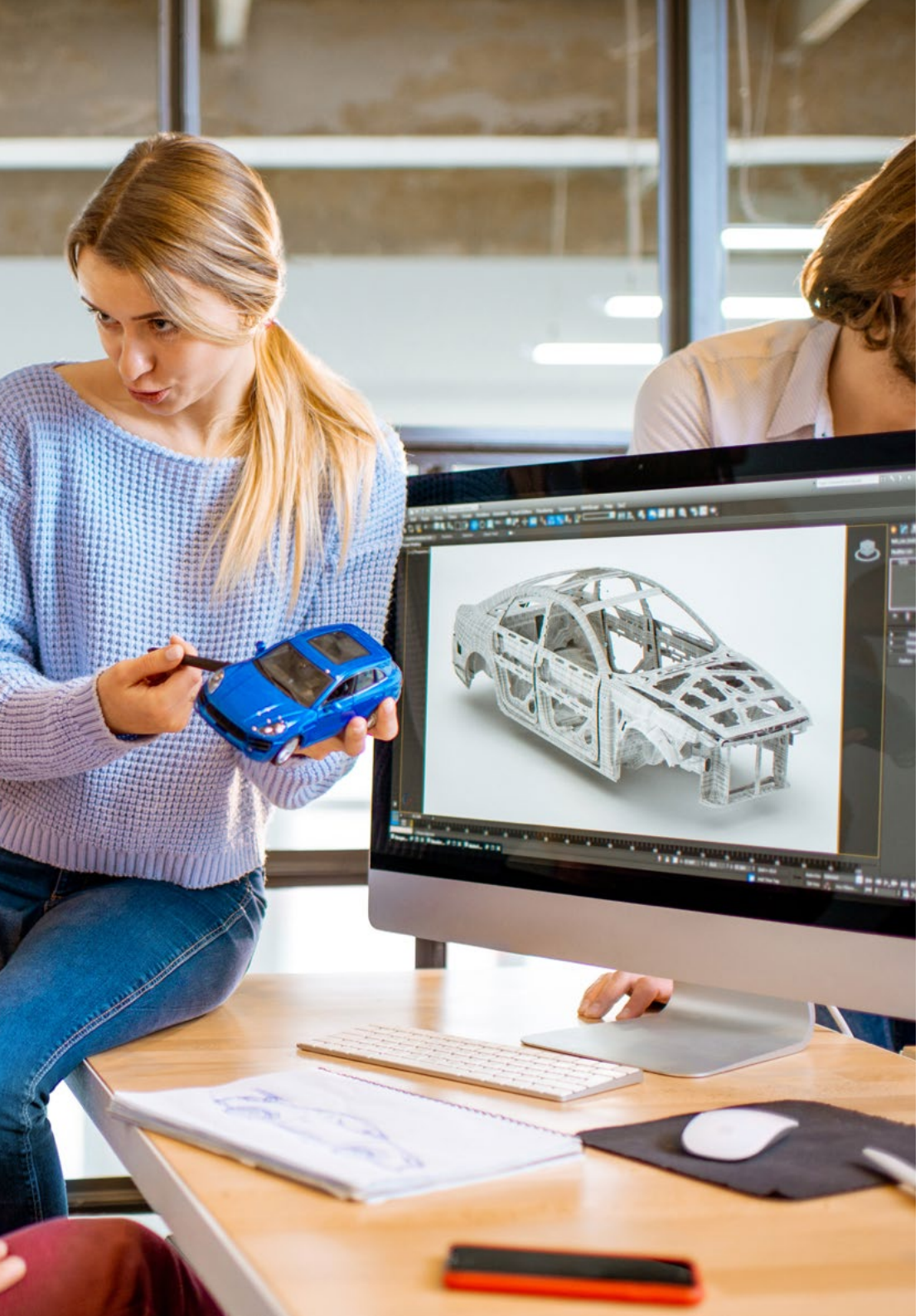
1.2. Transformations and Geometry
- 1.2.1. Interactive and Parametric Transformations
- 1.2.2. Standard and Extended Primitives
- 1.2.3. Scaling Transformation
- 1.2.4. Select and Place / Select and Rotate
- 1.2.5. Align and Symmetry

1.3. Main Operations
- 1.3.1. Duplicate, Interactive Selection and Selection Groups and Elements
- 1.3.2. Layers, Grid, Snap and Pivot Point
- 1.3.3. Links, Coordinate Systems, Actions, Views and Isolate Geometry

1.4. Parametric Modifiers
- 1.4.1. Bend, Taper, Skew and Twist
- 1.4.2. Stretch and Squeeze
- 1.4.3. Ripple, Wave and Noise
- 1.4.4. Spherify, Lattice and Mirror
- 1.4.5. Push and Relax
- 1.4.6. Slice, Shell and CapHoles

1.5. Free Deformation Modifiers
- 1.5.1. FFD Modifiers
- 1.5.2. FFD Cyl
- 1.5.3. FFD Box

1.6. Composition Objects
- 1.6.1. Boolean Operations Boolean and ProBoolean
- 1.6.2. Objects Dispersion Scatter
- 1.6.3. Morphism Morph





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

1.8. 2D Shapes Advanced Splines
- 1.8.1. Editable Splines and use of Grid and Snap to Create 2D Shapes
- 1.8.2. Parametric Modifiers, FFD and Booleans with Splines
- 1.8.3. Extended Splines and Section

1.9. Modifiers of splines
- 1.9.1. Extrude
- 1.9.2. Bevel
- 1.9.3. Sweep
- 1.9.4. Lathe

1.10. Composition Objects Splines
- 1.10.1. Loft
- 1.10.2. Terrain
- 1.10.3. Shape Merge

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

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

2.2. Mesh Editing Geometry
- 2.2.1. Vertex, Edge and Edge Editing
- 2.2.2. Polygon, Element and Geometry Editing
- 2.2.3. Geometry Cutting Planes and Added Resolution

2.3. Mesh Editing Selection Groups
- 2.3.1. Geometry Alignment and Visibility
- 2.3.2. Selection Sub-Objects, Material IDs and Smoothing Groups
- 2.3.3. Surface Subdivision and Vertex Painting

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

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

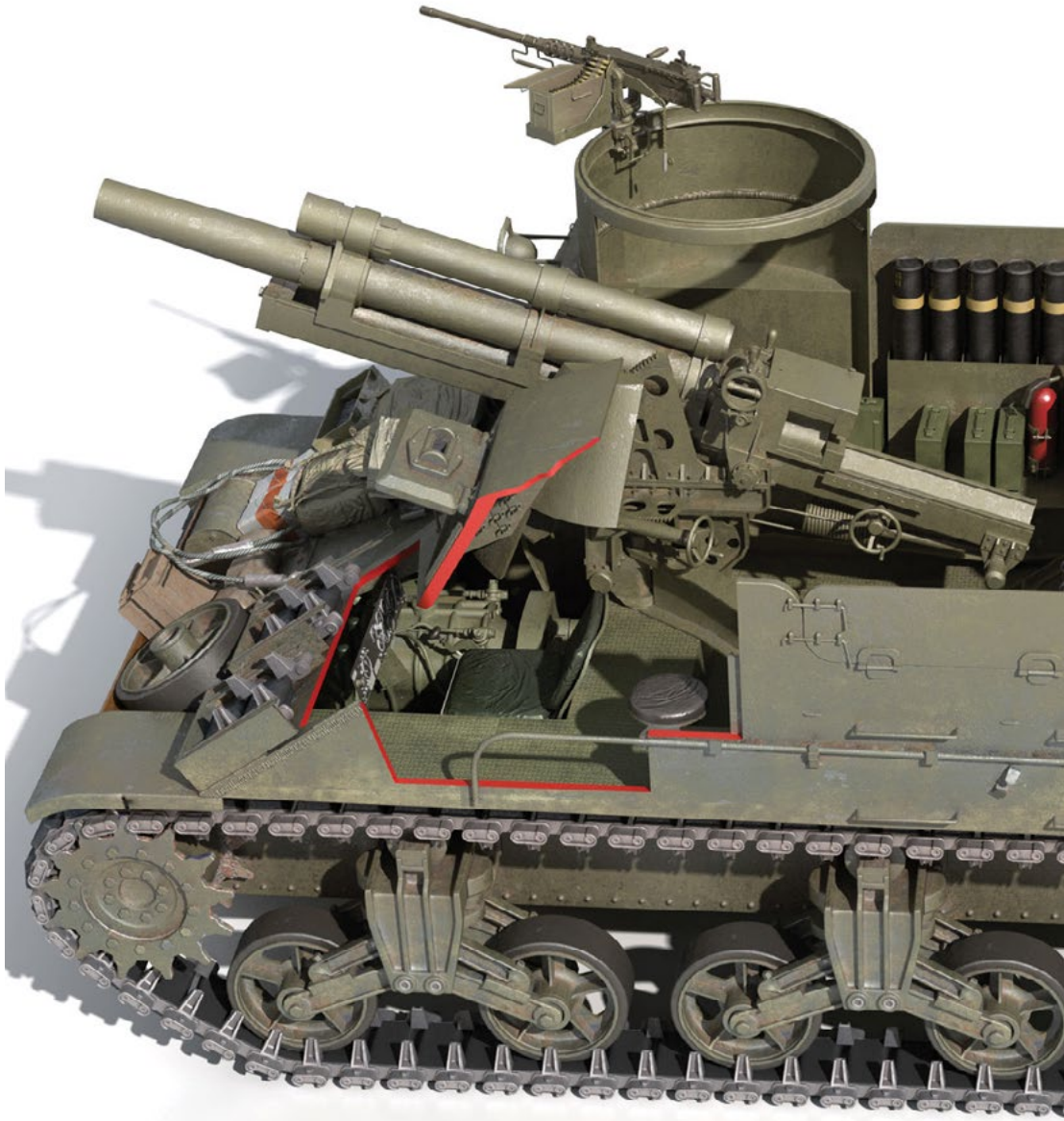
2.6. User Customization
- 2.6.1. Display Floater Tool and Panel Display
- 2.6.2. Object Properties and Preferences
- 2.6.3. UI Personalization Shortcuts, Menus and Colors
- 2.6.4. Viewer Configuration

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

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

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

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



## **Module 3.** Rendering with VRay Engine in 3DS Max

3.1. VRay Render Engine Assignment
- 3.1.1. Preparation of the Rendering Space
- 3.1.2. Render Setup Options and Assign Render
- 3.1.3. Optimize Rendering Time

3.2. Lighting and Light Creation
- 3.2.1. 3-Point Lighting
- 3.2.2. Light Setup
- 3.2.3. Render Region

3.3. Creation and Application of Materials
- 3.3.1. VRay Materials
- 3.3.2. VRay Materials Settings
- 3.3.3. Self-Illumination

3.4. From Substance Painter to VRay
- 3.4.1. Connect Nodes and Material Settings
- 3.4.2. Export Presets
- 3.4.3. Set Up Smart Material in VRay

3.5. Details and Positioning in the Scene
- 3.5.1. Application of Shades According to the Position of the Model
- 3.5.2. Adjust Model and Silhouette
- 3.5.3. Metallic Base

3.6. Surface Rounding
- 3.6.1. VRayEdgeTex
- 3.6.2. Functionality and Setup
- 3.6.3. Rendering With and Without Rounding

3.7. Field of View
- 3.7.1. Camera and Shot
- 3.7.2. Camera Aperture
- 3.7.3. Field of View

3.8. Ambient Occlusion and Global Illumination
- 3.8.1. GI and Render Elements
- 3.8.2. VRayExtraTex and VrayDirt
- 3.8.3. Global Illumination Multiplier

3.9. Rendering of a Static Frame
- 3.9.1. Adjust Render Values
- 3.9.2. Save Final Render
- 3.9.3. Composition of Ambient Occlusion

3.10. Rendering of a Sequence
- 3.10.1. Camera Animation
- 3.10.2. Rendering Options for Sequence
- 3.10.3. Frame Assembly for the Sequence

*Enroll now in this program and take the leap you are looking for in your professional career as a designer”*

05

# Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning.**

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## Case Study to contextualize all content

Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

*At TECH, you will experience a learning methodology that is shaking the foundations of traditional universities around the world"*

*You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.*

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

## A learning method that is different and innovative

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

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

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

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

## Relearning Methodology

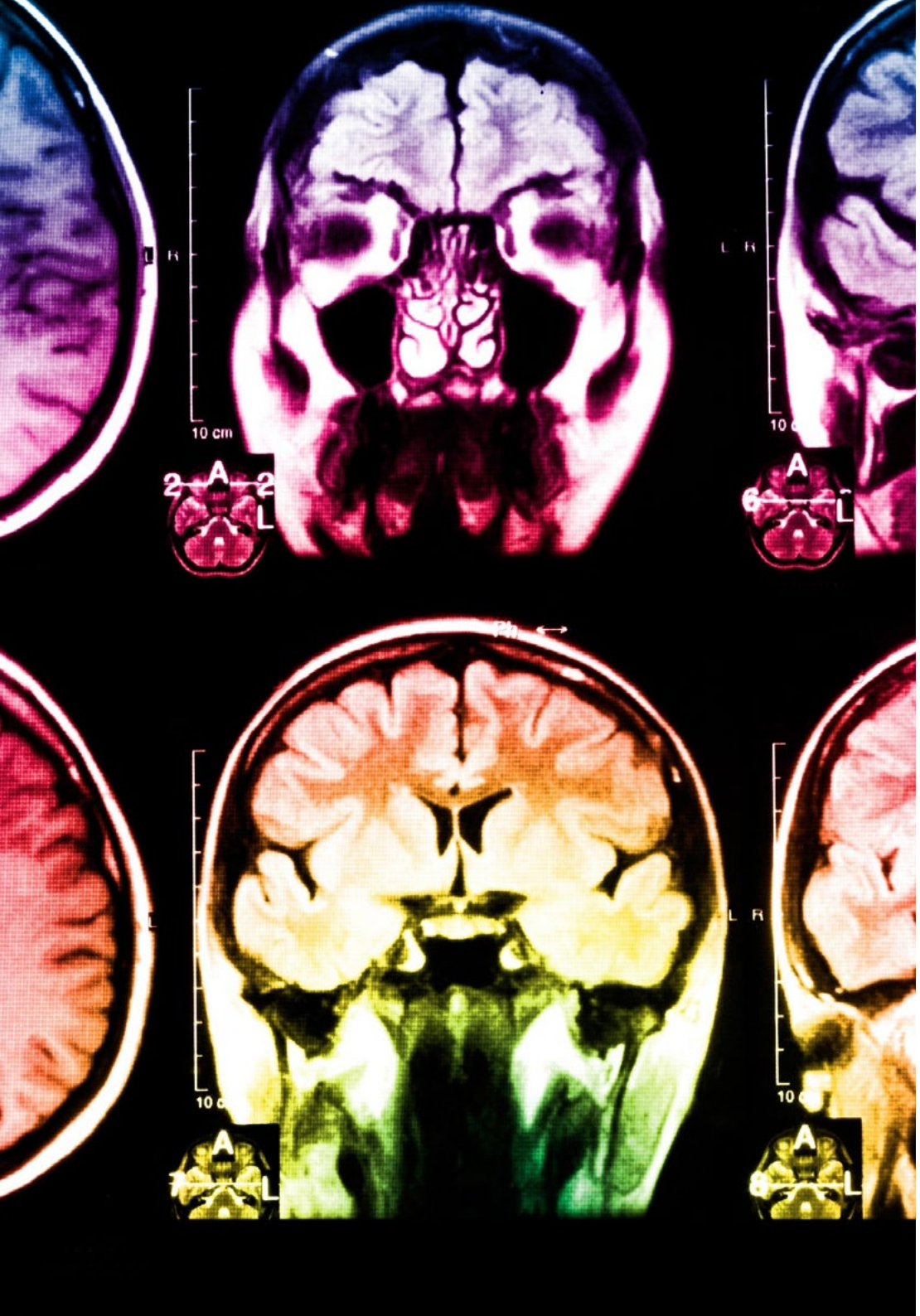
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

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

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

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

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



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

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

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

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

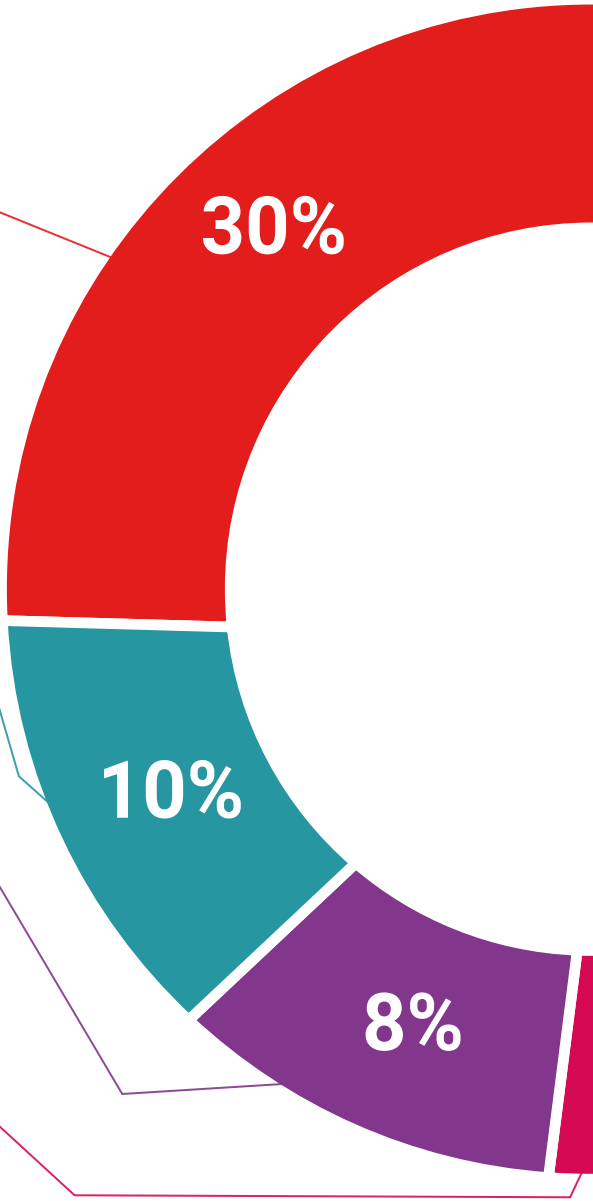
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

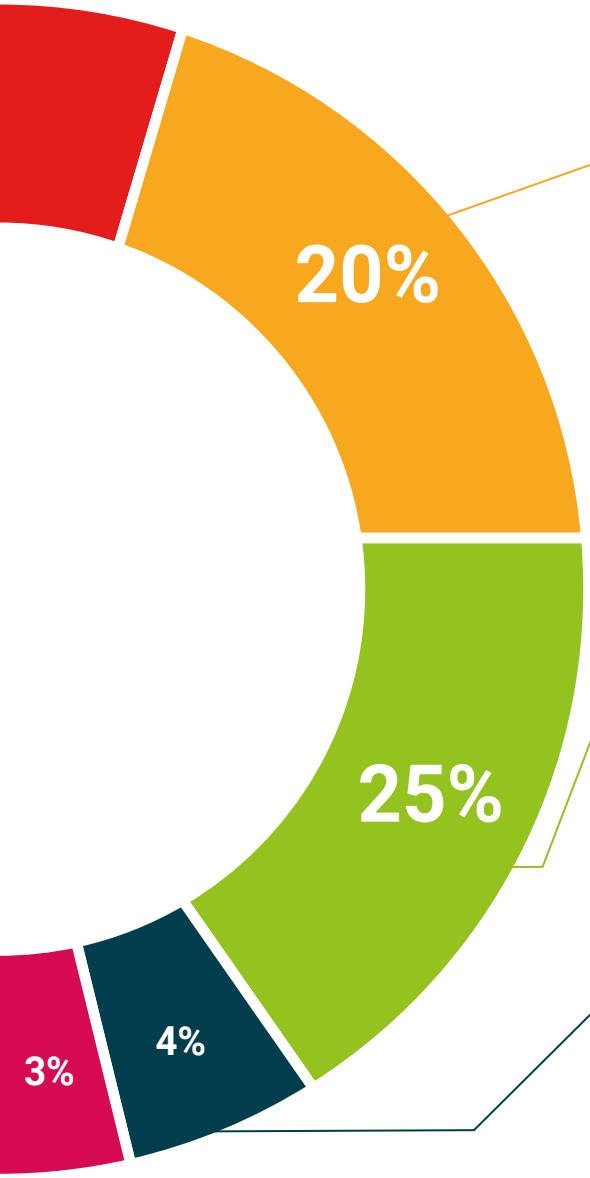
### Practising Skills and Abilities

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

### Additional Reading

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






### Case Studies

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

### Interactive Summaries

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

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

### Testing & Retesting

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

06

# Certificate

The Postgraduate Diploma 3D Modeling with 3D Studio Max guarantees students, in addition to the most rigorous and up to date education, access to a Postgraduate Diploma issued by TECH Global University.

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

This program will allow you to obtain a **Postgraduate Diploma in 3D Modeling with 3D Studio Max** endorsed by TECH Global University, the largest digital university in the world.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra ***(official bulletin)***. Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international educational framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of joint tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

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

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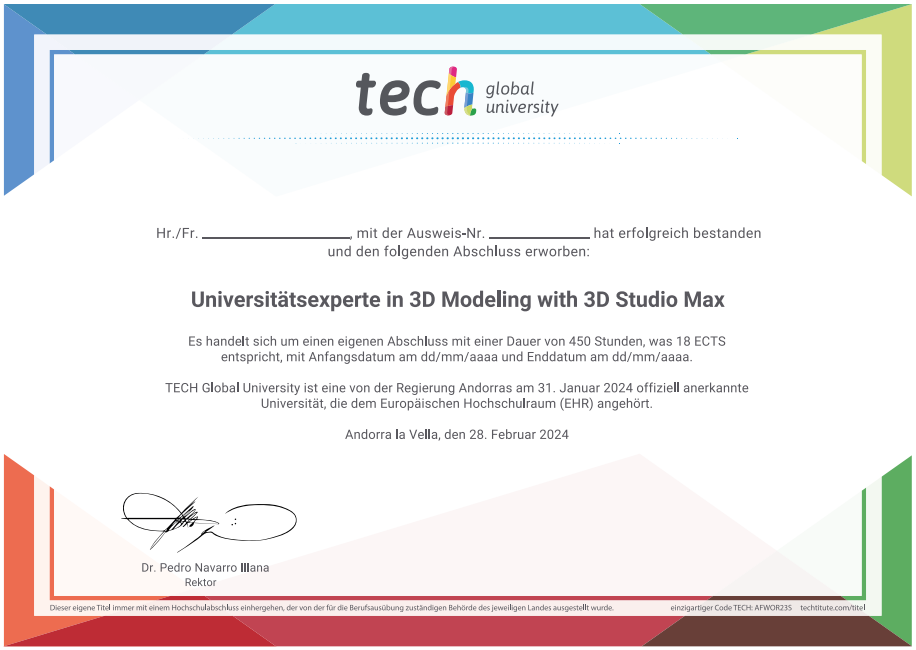
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Hr./Fr. _____, mit der Ausweis-Nr. _____ hat erfolgreich bestanden und den folgenden Abschluss erworben:

**Universitätsexperte in 3D Modeling with 3D Studio Max**

Es handelt sich um einen eigenen Abschluss mit einer Dauer von 450 Stunden, was 18 ECTS entspricht, mit Anfangsdatum am dd/mm/aaaa und Enddatum am dd/mm/aaaa.

TECH Global University ist eine von der Regierung Andorras am 31. Januar 2024 offiziell anerkannte Universität, die dem Europäischen Hochschulraum (EHR) angehört.

Andorra la Vella, den 28. Februar 2024

Dr. Pedro Navarro Illana
Rektor

Dieser eigene Titel immer mit einem Hochschulabschluss einhergehen, der von der für die Berufsausübung zuständigen Behörde des jeweiligen Landes ausgestellt wurde. einzigartiger Code TECH: AFWOR23S techtitute.com/titel

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

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