

# Postgraduate Diploma Polygonal Modeling in 3ds Max





## Postgraduate Diploma Polygonal Modeling in 3ds Max

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

Website: [www.techtute.com/us/information-technology/postgraduate-diploma/postgraduate-diploma-polygonal-modeling-3ds-max](http://www.techtute.com/us/information-technology/postgraduate-diploma/postgraduate-diploma-polygonal-modeling-3ds-max)

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# 01

# Introduction

Polygonal modeling is the backbone of 3D design and 3ds Max is a leading program in this field. It has established itself as one of the most widely used software for 3D modeling. Architecture, industrial production, 3D printing, or animation are just some of the sectors that rely on these programs for design. This fully online educational program is focused on allowing the student to balance other personal and professional projects with the updating of their knowledge in Polygonal Modeling with 3ds Max. It is only necessary to have a device with internet connection to access this comprehensive educational program.





“

*Become skilled in Polygonal Modeling with 3ds Max, one of the leading software in the field of 3D design"*

Polygonal modeling is one of the pillars on which three-dimensional modeling is based and is widely used due to its processing speed and the precision in detail it offers. Therefore, it is important that the professional working in this field has a good command of the state-of-the-art tools and software that allow this type of design. A thorough understanding of the fundamentals of this technique with 3ds Max software is essential.

This Postgraduate Diploma focuses on Polygonal Modeling in 3ds Max, and offers a comprehensive syllabus that begins with an introduction to polygonal modeling in the software, which aims to present the interface, utilities and techniques offered by the program. This section even works on the creation of UV maps and works with custom settings in modeling.

A second section will work on advanced polygonal modeling in 3ds Max, with which you will be able to apply all the techniques for the development of specific products and create complex shapes through the development of simple shapes. This part of the program is eminently practical because we work on the creation of an aircraft model. It is also intended to teach the physiognomy of a bot and to apply knowledge of technical components.

This program also develops notions about Low Poly 3D modeling with Studio Max, to work on basic shapes for mechanical models, develop the ability to decompose the elements and understand in depth how detail makes realism. In addition, this section is based on understanding how mechanical parts are connected.

This Postgraduate Diploma is taught completely online and has all its content hosted on the virtual platform, which can be accessed whenever you have an internet connection and a device. The teaching staff is made up of a group of experts and specialists in the field, who have developed the educational plan based on the needs of this booming sector.

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

- ◆ The development of case studies presented by experts in 3D Hard Surface Modeling
- ◆ 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 the self-assessment process can be carried out 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



*Access the contents whenever you want and whenever you can, thanks to the completely online format in which this Postgraduate Diploma is taught"*

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*This program covers the content in such a way that learning is acquired progressively and adapted to the time available to the student"*

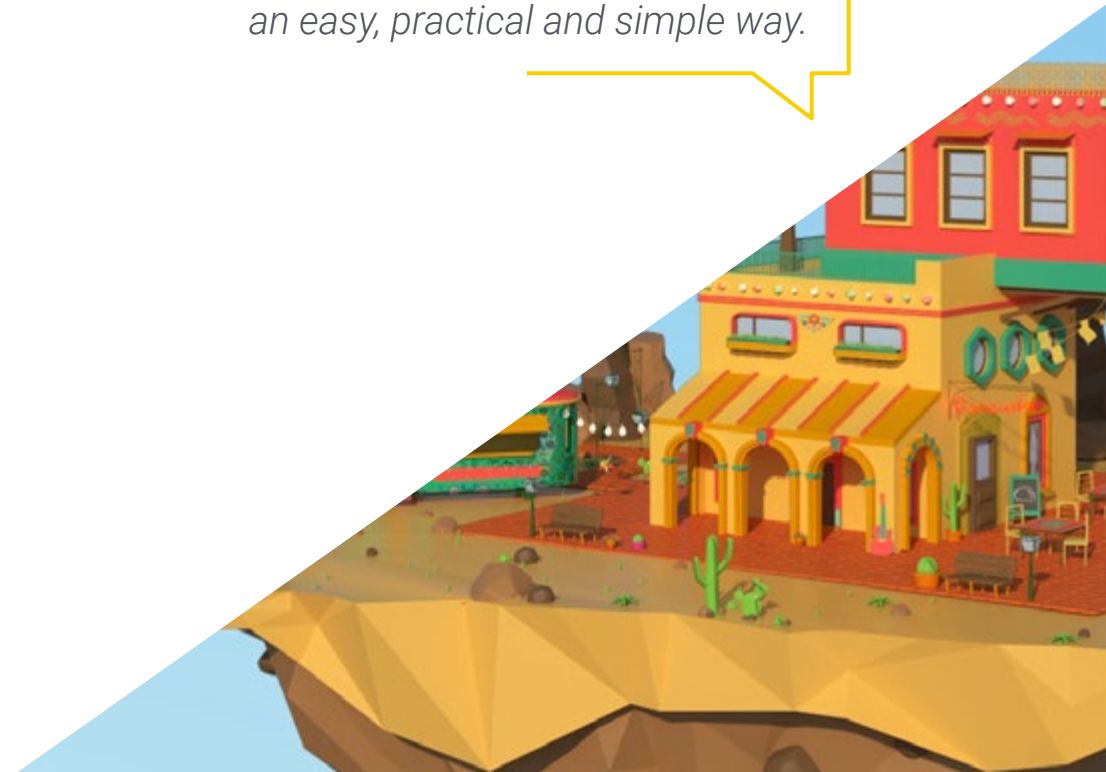
The program's teaching staff includes professionals from the sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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 immersive education programmed to learn in real situations.

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

*Learn polygonal modeling in 3ds Max with this Postgraduate Diploma and develop concrete models, such as an aircraft.*

*A 100%Online program that will allow you to manage your time and pace. Acquire this Postgraduate Diploma in an easy, practical and simple way.*



# 02 Objectives

This Postgraduate Diploma in Polygonal Modeling in 3ds Max is designed for the student to be able to develop polygonal models with this leading software on the market. All educational programs offered by TECH Global University are designed so that students can acquire knowledge in a progressive way, meeting the needs of the sectors for which they develop professionally. To do so, you will be provided with comprehensive content covering all aspects you need to make machine parts or design a building using 3ds Max software.







“

*This educational program adapts to the student's learning pace, but makes you become a true expert in Polygonal Modeling in 3ds Max"*



## General Objectives

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- ◆ Learn in depth the different types of Hard surface modeling, the different concepts and features to apply them in the 3D modeling industry
- ◆ Delve into the theory of shape creation in order to develop shape masters
- ◆ Learn in detail the basics of 3D modeling in its different forms
- ◆ Generate designs for different industries and their application
- ◆ Be a technical expert and/or artist in 3D modeling for Hard surface
- ◆ Know all the tools involved in the 3D modeling profession
- ◆ Acquire skills for the development of textures and FX of 3D models



*Create, design and develop the three-dimensional model of an aircraft and all its parts with the component with 3ds Max"*





## Specific Objectives

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### Module 1. Polygonal Modeling in 3D Studio Max

- ◆ Possess extensive knowledge of using 3D Studio Max
- ◆ Work with custom settings
- ◆ Have an in depth understanding of how mesh smoothing works
- ◆ Conceive geometries through a variety of methods
- ◆ Develop an understanding of how a mesh behaves
- ◆ Apply object transformation techniques
- ◆ Have knowledge of creating UV maps

### Module 2. Advanced Polygonal Modeling in 3D Studio Max

- ◆ Apply all the techniques for specific product development
- ◆ In depth understanding of component parts development
- ◆ Understand the topology of an aircraft in modeling in depth
- ◆ Apply knowledge of technical components
- ◆ Creating complex shapes through the development of simple shapes
- ◆ Understand the physiognomy of a bot form

### Module 3. Low Poly 3D Studio Max Modeling

- ◆ Working with basic shapes for mechanical models
- ◆ Develop the ability to decompose elements
- ◆ Understand in depth how detail makes for realism
- ◆ Solve different techniques to develop details
- ◆ Understand how mechanical parts are connected

03

# Course Management

The teaching staff of this Postgraduate Diploma is formed by a group of professionals with extensive experience in the design and modeling sector. They have been in charge of elaborating the syllabus to the millimeter and developing the various exercises and practical videos to reinforce the knowledge obtained in each class. Therefore, their extensive experience in the modeling world enables them to help the students to position themselves as first level designers in this highly competitive sector.





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*TECH has the best teachers and professionals to help you continue your professional path in the world of 3D modeling”*

## Management



### Mr. Salvo Bustos, Gabriel Agustín

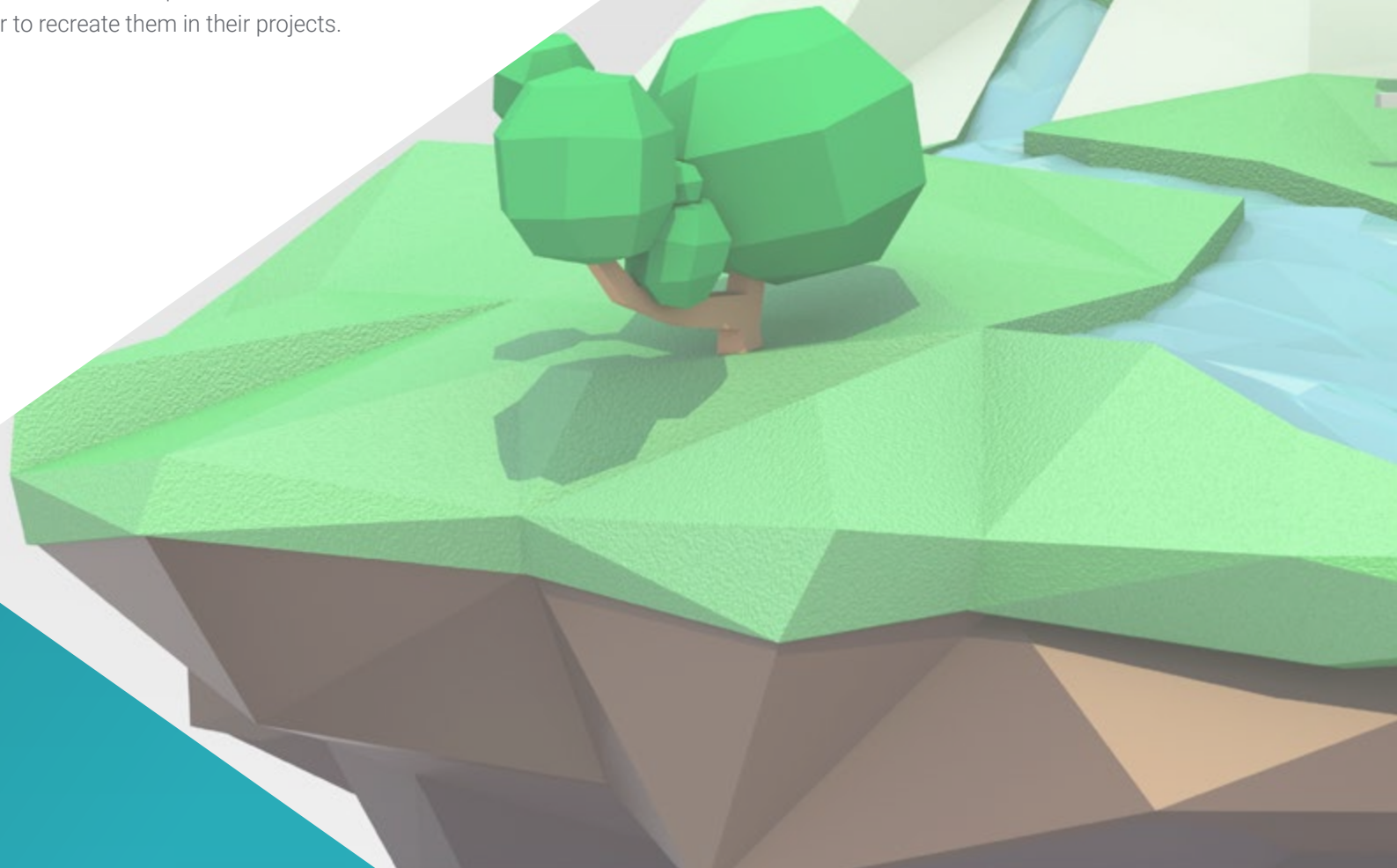
- ◆ 3D Artist at 3D VISUALIZATION SERVICE INC.
- ◆ 3D Production for Boston Whaler
- ◆ 3D Modeler at Shay Bonder Multimedia TV Production Company
- ◆ Audiovisual Producer at Digital Film
- ◆ Product Designer for Escencia de los Artesanos by Eliana M
- ◆ Industrial Designer Specializing in Products. National University of Cuyo
- ◆ Exhibitor at the Regional Visual Arts Salon Vendimia.
- ◆ Digital Composition Seminar. National University of Cuyo
- ◆ National Congress of design and production. C.P.R.O.D.I



# 04

## Structure and Content

The content of this Postgraduate Diploma is perfectly structured and ordered according to a complete syllabus, which introduces the student from the most basic and introductory concepts of Polygonal Modeling in 3ds Max, to the most advanced configurations and utilities of the same. It also explores Low Poly 3D modeling. That is, it covers all aspects to be a professional in this sector. The student will learn how to configure the software properly to work with meshes or UV Maps and understand how the components of a modeling work in order to recreate them in their projects.







“

*Model all the components of a design  
with this Postgraduate Diploma”*

## Module 1. Polygonal Modeling in 3D Studio Max

- 1.1. 3D Studio Max
  - 1.1.1. 3ds Max Interface
  - 1.1.2. Custom Settings
  - 1.1.3. Modeling with Primitives and Deformers
- 1.2. Reference Modeling
  - 1.2.1. Reference Image Creation
  - 1.2.2. Hard Surface Smoothing
  - 1.2.3. Scene Organization
- 1.3. High-Resolution Meshing
  - 1.3.1. Basic Smoothed Modeling and Smoothing Groups
  - 1.3.2. Modeling with Extrusions and Bevels
  - 1.3.3. Using the TurboSmooth Modifier
- 1.4. Spline Modeling
  - 1.4.1. Modifying Curvatures
  - 1.4.2. Configuring Polygon Faces
  - 1.4.3. Extruding and Spherizing
- 1.5. Creating Complex Shapes
  - 1.5.1. Setting Up Components and Work Grid
  - 1.5.2. Duplicating and Welding Components
  - 1.5.3. Cleaning Polygons and Smoothing
- 1.6. Modeling With Edge Cuts
  - 1.6.1. Creating and Positioning the Template
  - 1.6.2. Making Cuts and Cleaning Topology
  - 1.6.3. Extruding Shapes and Creating Folds
- 1.7. Modeling from Low Poly Model
  - 1.7.1. Starting with the Basic Shape and Adding Chamfers
  - 1.7.2. Adding Subdivisions and Generating Edges
  - 1.7.3. Cutting, Welding and Detailing
- 1.8. Edit Poly I Modifier
  - 1.8.1. Workflows
  - 1.8.2. Interface
  - 1.8.3. Sub Objects

- 1.9. Creating Compounds Objects
  - 1.9.1. Morph, Scatter, Conform and Connect Compound objects
  - 1.9.2. BlobMesh, ShapeMerge and Boolean Compound Objects
  - 1.9.3. Loft, Mesher and Proboolean Compound Objects
- 1.10. Techniques and Strategies to Create UVs
  - 1.10.1. Simple Geometries and Arc-Like Geometries
  - 1.10.2. Hard Surfaces
  - 1.10.3. Examples and Applications

## Module 2. Advanced Polygonal Modeling in 3D Studio Max

- 2.1. Sci-Fi spacecraft Modeling
  - 2.1.1. Creating our Workspace
  - 2.1.2. Starting with the Main Body
  - 2.1.3. Configuration for the Wings
- 2.2. The Cabin
  - 2.2.1. Development of the Cabin Area
  - 2.2.2. Modeling the Control Panel
  - 2.2.3. Adding Details
- 2.3. The Fuselage
  - 2.3.1. Defining Components
  - 2.3.2. Adjusting Minor Components
  - 2.3.3. Developing the Underbody Panel
- 2.4. The Wings
  - 2.4.1. Creation of the Main Wings
  - 2.4.2. Incorporation of the Tail
  - 2.4.3. Adding Inserts for the Ailerons
- 2.5. Main Body
  - 2.5.1. Separation of Parts into Components
  - 2.5.2. Creating Additional Panels
  - 2.5.3. Incorporating the Spring Doors
- 2.6. The Engines
  - 2.6.1. Creating the Space for the Engines
  - 2.6.2. Building the Turbines
  - 2.6.3. Adding the Exhaust

- 2.7. Adding Details
  - 2.7.1. Lateral Components
  - 2.7.2. Characteristic Components
  - 2.7.3. Refining General Components
- 2.8. Bonus I - Creation of the Pilot's Helmet
  - 2.8.1. Head Block
  - 2.8.2. Detail Refinements
  - 2.8.3. Helmet Neck Modeling
- 2.9. Bonus II – Creation of the Pilot's Helmet
  - 2.9.1. Helmet Neck Refinements
  - 2.9.2. Steps for Final Details
  - 2.9.3. Mesh Finishing
- 2.10. Bonus III – Creation of a Co-Pilot Robot
  - 2.10.1. Development of the Shapes
  - 2.10.2. Adding Details
  - 2.10.3. Supporting Edges for Subdivision

### Module 3. Low Poly 3D Studio Max Modeling

- 3.1. Heavy Machinery Vehicle Modeling
  - 3.1.1. Creation of the Volumetric Model
  - 3.1.2. Volumetric Modeling of the Crawler Tracks
  - 3.1.3. Volumetric Construction of the Shovel
- 3.2. Incorporating Different Components
  - 3.2.1. Cab Volumetry
  - 3.2.2. Volumetry of the Mechanical Arm
  - 3.2.3. Volumetry of the Mechanical Shovel Sword
- 3.3. Adding Subcomponents
  - 3.3.1. Creating Shovel Teeth
  - 3.3.2. Adding the Hydraulic Piston
  - 3.3.3. Connecting Subcomponents
- 3.4. Incorporating Details to Volumetrics I
  - 3.4.1. Creating Caterpillars
  - 3.4.2. Incorporating Track Bearings
  - 3.4.3. Defining the Track Housing

- 3.5. Incorporating Details to Volumetrics II
  - 3.5.1. Chassis Subcomponents
  - 3.5.2. Bearing Covers
  - 3.5.3. Adding Parts Cuts
- 3.6. Incorporating Details to Volumetrics III
  - 3.6.1. Creating Radiators
  - 3.6.2. Adding the Hydraulic Arm Base
  - 3.6.3. Creating the Exhaust Pipes
- 3.7. Incorporating Details to Volumetrics IV
  - 3.7.1. Creating the Protective Cabin Grille
  - 3.7.2. Adding Piping
  - 3.7.3. Adding Nuts, Bolts and Rivets
- 3.8. Developing the Hydraulic Arm
  - 3.8.1. Creating the Supports
  - 3.8.2. Retainers, Washers, Screws and Connections
  - 3.8.3. Creation of the Head
- 3.9. Developing the Cabinet
  - 3.9.1. Defining the Housing
  - 3.9.2. Adding Windshields
  - 3.9.3. Door Handle and Headlight Details
- 3.10. Mechanical Development of the Excavator
  - 3.10.1. Creating the Body and Teeth
  - 3.10.2. Creating the Tooth Roller
  - 3.10.3. Wiring with Splines, Connectors and Fasteners



*Don't wait any longer, enroll in this online educational program and get your Postgraduate Diploma directly, without submitting any final work"*

# 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.

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*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 Information Technology 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. Throughout the course, students 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 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 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 in Polygonal Modeling in 3ds Max guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Global University.



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*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 your **Postgraduate Diploma in Polygonal Modeling in 3ds Max** endorsed by **TECH Global University**, the world's largest online university.

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

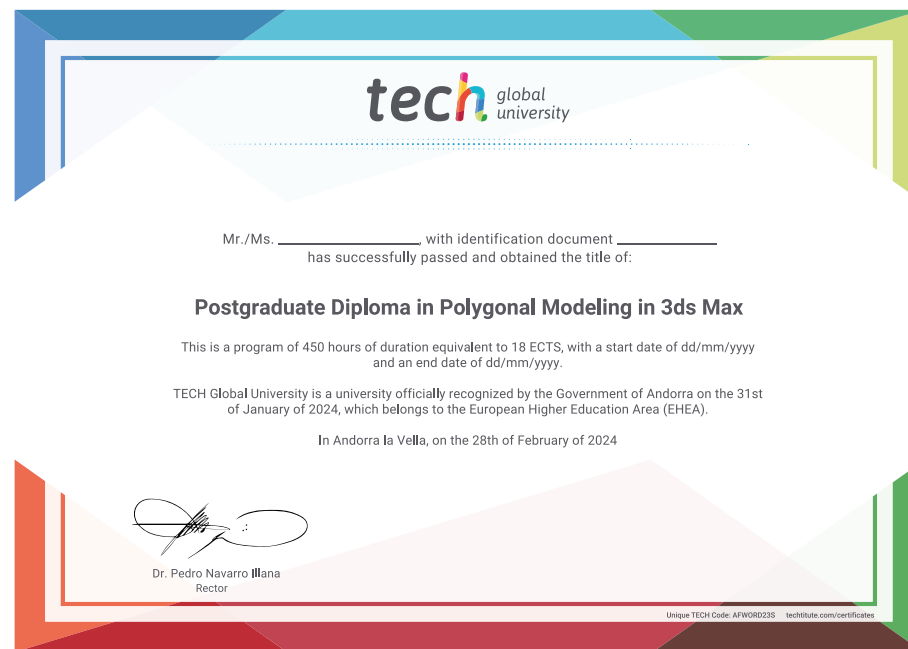
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Polygonal Modeling in 3ds Max**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**



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

future  
health confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present  
development language  
classroom



## Postgraduate Diploma Polygonal Modeling in 3ds Max

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

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