

# Postgraduate Diploma

## Texture Creation for Hard Surface



## Postgraduate Diploma Texture Creation for Hard Surface

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtitute.com/pk/information-technology/postgraduate-diploma/postgraduate-diploma-texture-creation-hard-surface](http://www.techtitute.com/pk/information-technology/postgraduate-diploma/postgraduate-diploma-texture-creation-hard-surface)

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# 01

# Introduction

The texturing process in three-dimensional modeling is essential to achieve accurate and realistic finishes. 3D design is a growing sector that is being applied in more and more technological fields, for example, for the creation of architectural plans, 3D printing models, animation, video game creation, etc. This educational program covers the study of primordial shapes and forms, as well as Hard Surface modeling or the creation of textures with this same technique. The educational program is offered entirely online, making it easier for students to balance their studies with other personal or professional projects and allowing them to progress at their own speed and pace.





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*Become an expert in the creation of textures in three-dimensional modeling”*

This Postgraduate Diploma in Texture Creation for Hard Surfaces will introduce the student to this complex field of three-dimensional modeling. Creating textures for Hard Surface is essential to achieve realistic finishes in the models to be designed. This program focuses, first of all, on the study of geometry and shape, which will allow the development of the student's own criteria for the realization of mechanical components.

Secondly, the content delves into the Hard Surface texturing technique itself, to understand in depth how to control the topology, to develop the communication of functions and to have valid information about the areas that make up the modeling. In addition, mapping and texturing of 3D meshes are covered in depth.

Finally, this educational plan delves into the creation of textures. The students will apply all the texturing techniques for Hard Surface models, will work on real cases in the application of textured details and will identify variations in PBR materials. They will also learn how to export materials and maps for different platforms.

This Postgraduate Diploma, taught entirely online, has a direct qualification, so students do not have to submit a final paper to obtain their university certificate. The Relearning and learning by doing teaching methodology is applied, which promotes the autonomous and progressive learning of the students. In addition, you will have all the multimedia material available on the virtual platform.

This **Postgraduate Diploma in Texture Creation for Hard Surface** 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



*Get this program directly, without having to submit a final work and completely online"*

“

*Learn how to apply 3D mesh mapping and texturing in your 3D designs”*

The program includes, in its teaching staff, professionals from the sector who bring to this program the experience of their work, in addition to recognized specialists from prestigious reference societies and universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide 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.

*Enhance your knowledge of three-dimensional modeling with this fully online Postgraduate Diploma.*

*Get to apply different texturing techniques for Hard Surface models and work on real cases in the application of details with textures.*

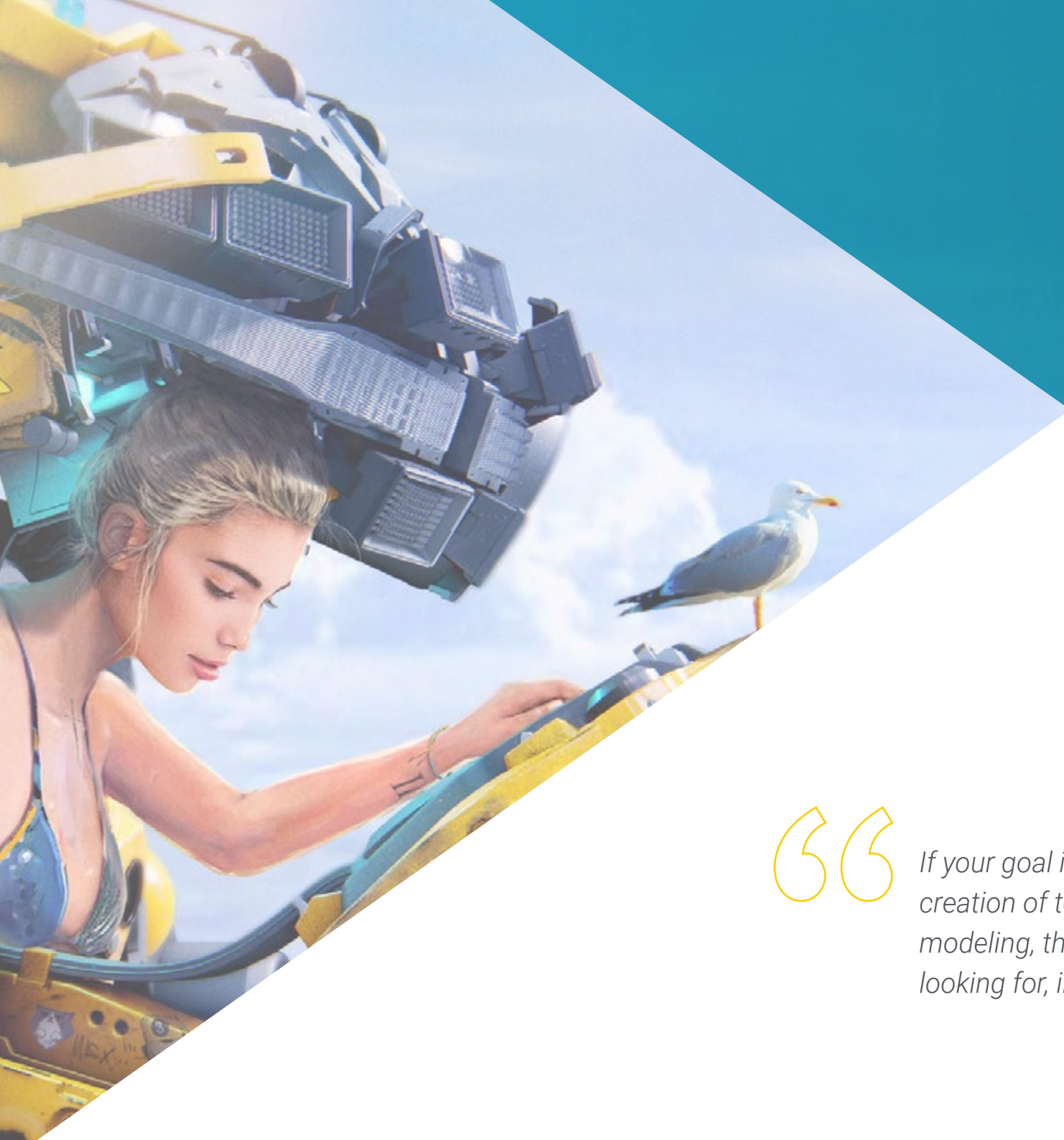


# 02 Objectives

The expert creation of textures for Hard Surface requires a previous investigation in these techniques. This educational program allows you to delve into the essential aspects to recreate the desired finishes in an online model. For this reason, the content is divided into three main fields that the student will have to master, as well as the support of a teaching staff made up of real professionals in the sector.







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*If your goal is to become a true expert in the creation of textures for three-dimensional modeling, this is the program you were looking for, in a convenient online format"*



## 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

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*In an online format and with a relearning and learning by doing methodology, you will become a professional creating textures in the most comfortable way and at your own pace"*





## Specific Objectives

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### Module 1. Study of Figure and Shape

- ◆ Conceive and apply constructions of geometric figures
- ◆ Understand the basics of three-dimensional geometry
- ◆ Knowing in detail how it is represented in technical drawing
- ◆ Identify different mechanical components
- ◆ Apply transformations through symmetries
- ◆ Develop an understanding of how shapes are developed
- ◆ Work through shape analysis

### Module 2. Hard Surface Modeling

- ◆ Understand in depth how to control the topology
- ◆ Develop function communication
- ◆ Have knowledge of the emergence of Hard Surface
- ◆ Have a detailed understanding of the different industries of its application
- ◆ Have a comprehensive understanding of the different types of modeling
- ◆ Possess valid information on the fields that make up modeling

### Module 3. Texture Creation for Hard Surface

- ◆ Apply all texturing techniques for Hard surface models
- ◆ Work on real cases in the application of textured details
- ◆ Identify variations in PBR materials
- ◆ Have extensive knowledge of the differences in metallic materials
- ◆ Resolve technical details using maps
- ◆ Learn how to export materials and maps for different platforms

# 03

# Course Management

Top level specialists in the sector are part of the management and teaching staff of this program. Together they have designed an approachable and perfectly structured study plan, so that the student can progressively delve deeper into the content. In addition, the didactic material will always be available on the virtual platform, and they will be in charge of teaching each class, as well as providing all the necessary help for the reinforcement of knowledge. Their extensive experience in three dimensional textured modelling makes them perfect teachers to help the student become a high level designer in this highly competitive field.





“

*You can count on the unconditional support of the teachers of this Postgraduate Diploma to achieve the goals you set for yourself”*

## 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 program covers all the fields of knowledge that the student must master to perform the texturing of any object from scratch. Therefore, the syllabus first delves into the theoretical and basic concepts, then delves into the more specific knowledge of the Hard Surface technique and finally delves specifically into the creation of textures. In this way, the student will be able to compete and take on new professional challenges without difficulty. This syllabus is constantly updated with the latest developments in the sector and adapted to the demands of the labor market.







“

*Get to compete for new professional projects  
and gain greater professional recognition”*

## Module 1. Study of Figure and Shape

- 1.1. The Geometric Figure
  - 1.1.1. Types of Geometrical Figures
  - 1.1.2. Basic Geometric Constructions
  - 1.1.3. Geometric Transformations on the Plane
- 1.2. Polygons
  - 1.2.1. Triangles
  - 1.2.2. Quadrilaterals
  - 1.2.3. Regular Polygons
- 1.3. Axonometric System
  - 1.3.1. System Fundamentals
  - 1.3.2. Types of Orthogonal Axonometry
  - 1.3.3. Sketches
- 1.4. Three-Dimensional Drawing
  - 1.4.1. Perspective and Third Dimension
  - 1.4.2. Essential Elements of Drawing
  - 1.4.3. Perspectives
- 1.5. Technical Drawing
  - 1.5.1. Basic Notions
  - 1.5.2. Disposition of Views
  - 1.5.3. Cuts
- 1.6. Fundamentals of Mechanical Elements I
  - 1.6.1. Axis
  - 1.6.2. Joints and Bolts
  - 1.6.3. Springs
- 1.7. Fundamentals of Mechanical Elements II
  - 1.7.1. Bearings
  - 1.7.2. Gears
  - 1.7.3. Flexible Mechanical Elements
- 1.8. Laws of Symmetry
  - 1.8.1. Translation, Rotation, Reflection, Extension
  - 1.8.2. Touch, Overlay, Subtract, Intersect, Join
  - 1.8.3. Combined Laws

- 1.9. Form Analysis
  - 1.9.1. Form and Function
  - 1.9.2. Mechanical Form
  - 1.9.3. Types of Shapes
- 1.10. Topological Analysis
  - 1.10.1. Morphogenesis
  - 1.10.2. Composition
  - 1.10.3. Morphology and Topology

## Module 2. Hard Surface Modeling

- 2.1. Hard Surface Modeling
  - 2.1.1. Topology Control
  - 2.1.2. Function Communication
  - 2.1.3. Speed and Efficiency
- 2.2. Hard Surface I
  - 2.2.1. Hard Surface
  - 2.2.2. Development
  - 2.2.3. Structure
- 2.3. Hard Surface II
  - 2.3.1. Applications
  - 2.3.2. Physical Industry
  - 2.3.3. Virtual Industry
- 2.4. Types of Modeling
  - 2.4.1. Technical Modeling / Nurbs
  - 2.4.2. Polygonal Modeling
  - 2.4.3. Sculpt Modeling
- 2.5. Deep Hard Surface Modeling
  - 2.5.1. Profiles
  - 2.5.2. Topology and Edge Flow
  - 2.5.3. Mesh Resolution

- 2.6. Nurbs Modeling
  - 2.6.1. Dots, Lines, Polylines, Curves
  - 2.6.2. Surfaces
  - 2.6.3. 3D Geometry
- 2.7. Fundamentals of Polygonal Modeling
  - 2.7.1. Edit Poly
  - 2.7.2. Vertices, Edges, Polygons
  - 2.7.3. Surgery
- 2.8. Fundamentals of Sculpt Modeling
  - 2.8.1. Basic Geometry
  - 2.8.2. Subdivisions
  - 2.8.3. Deformities
- 2.9. Topology and Retopology
  - 2.9.1. High Poly and Low Poly
  - 2.9.2. Polygonal Count
  - 2.9.3. Bake Maps
- 2.10. UV Maps
  - 2.10.1. UV Coordinates
  - 2.10.2. Techniques and Strategies
  - 2.10.3. Unwrapping

### Module 3. Texture Creation for Hard Surface

- 3.1. Substance Painter
  - 3.1.1. Substance Painter
  - 3.1.2. Burning Maps
  - 3.1.3. Materials in Color ID
- 3.2. Materials and Masks
  - 3.2.1. Filters and Generators
  - 3.2.2. Brushes and Paints
  - 3.2.3. Flat Projections and Tracings
- 3.3. Texturing a Combat Knife
  - 3.3.1. Assigning Materials
  - 3.3.2. Adding Textures
  - 3.3.3. Coloring Parts
- 3.4. Asperities
  - 3.4.1. Variations
  - 3.4.2. Details
  - 3.4.3. Alphas
- 3.5. Metallicity
  - 3.5.1. Polishes
  - 3.5.2. Oxides
  - 3.5.3. Scratches
- 3.6. Normal and Height Maps
  - 3.6.1. Bumps Maps
  - 3.6.2. Burning Normal Maps
  - 3.6.3. Displacement Map
- 3.7. Other Types of Map
  - 3.7.1. Ambient Occlusion Map
  - 3.7.2. Specularity Map
  - 3.7.3. Opacity Map
- 3.8. Texturing a Motorcycle
  - 3.8.1. Tires and Basket Materials
  - 3.8.2. Luminous Materials
  - 3.8.3. Editing Burned Materials
- 3.9. Details
  - 3.9.1. Stickers
  - 3.9.2. Smart Masks
  - 3.9.3. Paint Generators and Masks
- 3.10. Finalizing Texturing
  - 3.10.1. Manual Editing
  - 3.10.2. Exporting Maps
  - 3.10.3. Dilation Vs. No Padding

# 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 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 Texture Creation for Hard Surface guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.



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

This **Postgraduate Diploma in Texture Creation for Hard Surface** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Diploma**, issued by **TECH Technological University** via tracked delivery\*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Diploma in Texture Creation for Hard Surface**

Official N° of hours: **450 h.**



\*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.

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 Texture Creation for Hard Surface

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