Postgraduate Certificate

Digital Representation Techniques

tech technological university

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Postgraduate Certificate
Digital Representation Techniques

- Modality: **online**
- Duration: **12 weeks**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/pk/design/postgraduate-certificate/digital-representation-techniques

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01

Introduction

One of the most important aspects in the field of product design is digital modeling. As such, mastering the techniques of this area can open numerous professional doors for designers, since it will allow them to work in areas such as the creation of packaging or the planning and elaboration of all types of three-dimensional models. Therefore, this program will provide the student with all the keys to this discipline, all of which will be delivered with a fully online teaching methodology that allows you to study wherever and whenever you want. No travel or fixed schedules. With 24-hour access to all the program's teaching resources.

This program will allow you to master the Digital Representation Techniques that are used to design all types of Packaging, using the most advanced three-dimensional modeling tools"

When it comes to marketing a product, there are several tools that are essential to ensure that it is designed properly. As such, professionals in this sector must keep up to date with the most advanced techniques in digital representation, so that they can work with three-dimensional models. Mastering this type of modeling is essential to create attractive packaging designs, a fundamental aspect in the field of sales.

Therefore, this Postgraduate Certificate in Digital Representation Techniques is presented as the best option to delve into this important area of design, since it will allow the student to learn the fundamental procedures. As a result, students will learn the basics of classical polygonal modeling and rendering throughout the course of the program.

This program is delivered through an online learning system, specially designed so that professionals can balance their work with their studies, as it can be fully adapted to individual circumstances. Additionally, it will provide students with the best multimedia resources, which will make it easy to deepen their knowledge of Digital Representation Techniques, since they will have 24-hour access to videos, exercises, readings, case studies and even master classes.

This **Postgraduate Certificate in Digital Representation Techniques** contains the most complete and up-to-date educational program on the market. Its most notable features are:

- Practical cases presented by experts in Digital Design
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- Practical exercises where self-assessment can be used to improve learning
- Its special emphasis on innovative methodologies
- 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

Thanks to this qualification, you will deepen your knowledge of polygonal modeling, rendering and the application of virtual and augmented reality in the field of digital representation"

Digital representation is essential in product design and with this Postgraduate Certificate you will be prepared to access the best professional opportunities"

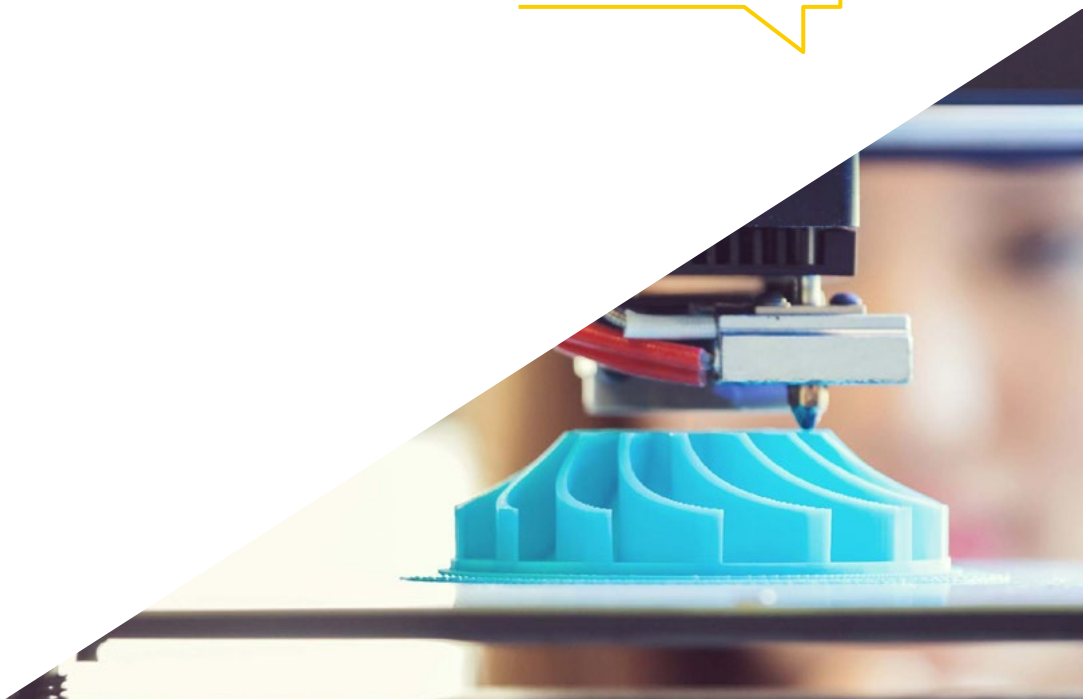
TECH's online methodology will make it very easy to balance your work and your studies, since it can be completely adapted to your personal circumstances.

The best multimedia materials are waiting for you: videos, exercises, readings, master classes, practical cases, etc.

The program's teaching staff includes professionals from the sector who contribute their work experience to this training 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 training programmed to train 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.



02

Objectives

The main objective of this Postgraduate in Digital Representation Techniques is to provide professionals with the best tools in this field, so that they can prepare themselves to carry out the best packaging designs. This way, the program is completely oriented towards this goal, transforming the student into a leading specialist upon completion of the academic syllabus.

Reach all your professional goals thanks to your new knowledge in Digital Representation Techniques"

General Objectives

- Learn the fundamental concepts of three-dimensional form, its geometric representation, its construction and its application to design
- Acquire theoretical and practical methodological knowledge necessary for the realization of technical projects
- Analyze and evaluate materials used in engineering based on their properties
- Delve into the processes of innovation and technology transfer for the development of new products and processes and the establishment of a new state of the art

Digital Representation Techniques are essential to carry out all types of product designs, so completing this program will allow you to access important jobs in this professional field"

Specific Objectives

- Conceive and represent the visual attributes of objects and space, as well as mastering the techniques of three-dimensional representation, including computer-based techniques
- Create three-dimensional models with sculptural techniques, and translate them into three-dimensional digital representations, and vice versa, understanding the relationship between both forms of construction
- Integrate the contents of the subject transversally with those provided in other subjects
- Master the aspects of three-dimensional form, its geometric representation, its construction and application to design
- Develop the ability to generate virtual models or prototypes of high photorealistic quality
- Transversally integrate the contents of the subject with those provided in other subjects

03

Structure and Content

This Postgraduate Certificate in Digital Representation Techniques has been developed by leading specialists in this field of design, who have integrated the latest developments in this type of procedure into a single program. Thanks to this program, the professional will be able to learn about the most recent innovations in areas such as digital sculpture, three-dimensional animation or the modeling of correlated pieces, among many other issues. With these contents you will be prepared to face all the present and future challenges of the sector.

A syllabus that has been specifically designed to respond to market needs in the product design sector"

Module 1. Digital Representation Techniques I

1.1. Introduction to 3D Modeling
- 1.1.1. Computer Modeling Basics
- 1.1.2. Modeling Context
- 1.1.3. Modeling Methods
- 1.1.4. Description of Modeling Software
- 1.1.5. Comparison of Modeling Software

1.2. Classic Polygonal Modeling
- 1.2.1. Tools
- 1.2.2. Creation of Objects
- 1.2.3. Shapes
- 1.2.4. Surgery
- 1.2.5. Subdivision Modeling

1.3. Digital Sculpture
- 1.3.1. Fundamentals
- 1.3.2. Tools
- 1.3.3. Surgery
- 1.3.4. Creation of Sculptures

1.4. Materials and Textures
- 1.4.1. Fundamentals
- 1.4.2. Materials
- 1.4.3. Texture.
- 1.4.4. Unwrapping

1.5. Illumination and Cameras
- 1.5.1. Fundamentals
- 1.5.2. Types of Illumination
- 1.5.3. Camara Adjustments
- 1.5.4. Spatial Composition

1.6. Rendering
- 1.6.1. Introduction to Rendering
- 1.6.2. Applications of Rendering
- 1.6.3. Patterns for Rendering
- 1.6.4. Rendering Engines

1.7. 3D Animation
- 1.7.1. Fundamentals
- 1.7.2. Kinematics
- 1.7.3. Controllers

1.8. Video Editing
- 1.8.1. Introduction to Composition
- 1.8.2. Editing Tools
- 1.8.3. Video Post-Production

1.9. Virtual Representation. Applying Techniques
- 1.9.1. Simulation and Virtual Walks
- 1.9.2. Technical Representation and Virtual Projects
- 1.9.3. Virtual Representation in the Industry

1.10. 3D Printing
- 1.10.1. Introduction to 3D Impression
- 1.10.2. Design Parameters for 3D Impression
- 1.10.3. Preparation of Archives for 3D Printing

Module 2. Digital Representation Techniques II

2.1. Complex Modeling
- 2.1.1. Complex Sketches
- 2.1.2. Complex Operations
- 2.1.3. Surface Modeling
- 2.1.4. Veneer

2.2. Mechanisms and Components
- 2.2.1. Design of Components
- 2.2.2. Sketch of Mechanisms
- 2.2.3. Modeling of Correlated Parts
- 2.2.4. Synchronization of Mechanisms

2.3. Conceptual Designs
- 2.3.1. Sketching for Modeling
- 2.3.2. Digitalization of the Sketch
- 2.3.3. Presentation Tools
- 2.3.4. Modeling of Virtual Prototypes

2.4. Veneer
- 2.4.1. Fundamentals of Metal Sheet Veneer
- 2.4.2. Properties of the Materials
- 2.4.3. Veneer Development
- 2.4.4. Veneer Modeling

2.5. Shots
- 2.5.1. Regulations
- 2.5.2. Exploded-View Drawing
- 2.5.3. Overview Plan
- 2.5.4. Exploded

2.6. Digital Materials and Textures
- 2.6.1. Application of Materials and Textures
- 2.6.2. Brightness and Shadows
- 2.6.3. Reflection and Surroundings

2.7. Rendering
- 2.7.1. Design and Strategy of Rendering
- 2.7.2. Preparation of the Model and the Scene
- 2.7.3. Light
- 2.7.4. Cameras
- 2.7.5. Rendering Engines

2.8. Photorealistic Image Processing
- 2.8.1. Image Editing
- 2.8.2. Photomontages
- 2.8.3. Realism and Conceptual Representation

2.9. Augmented Reality and Virtual Reality
- 2.9.1. Platforms and Applications
- 2.9.2. Presentation of the Product in Virtual Reality
- 2.9.3. Presentation of the Product in Augmented Reality

2.10. Combined Presentation
- 2.10.1. Valoration of Resources
- 2.10.2. Technique Selection and Applications
- 2.10.3. Combined Proposal

04

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

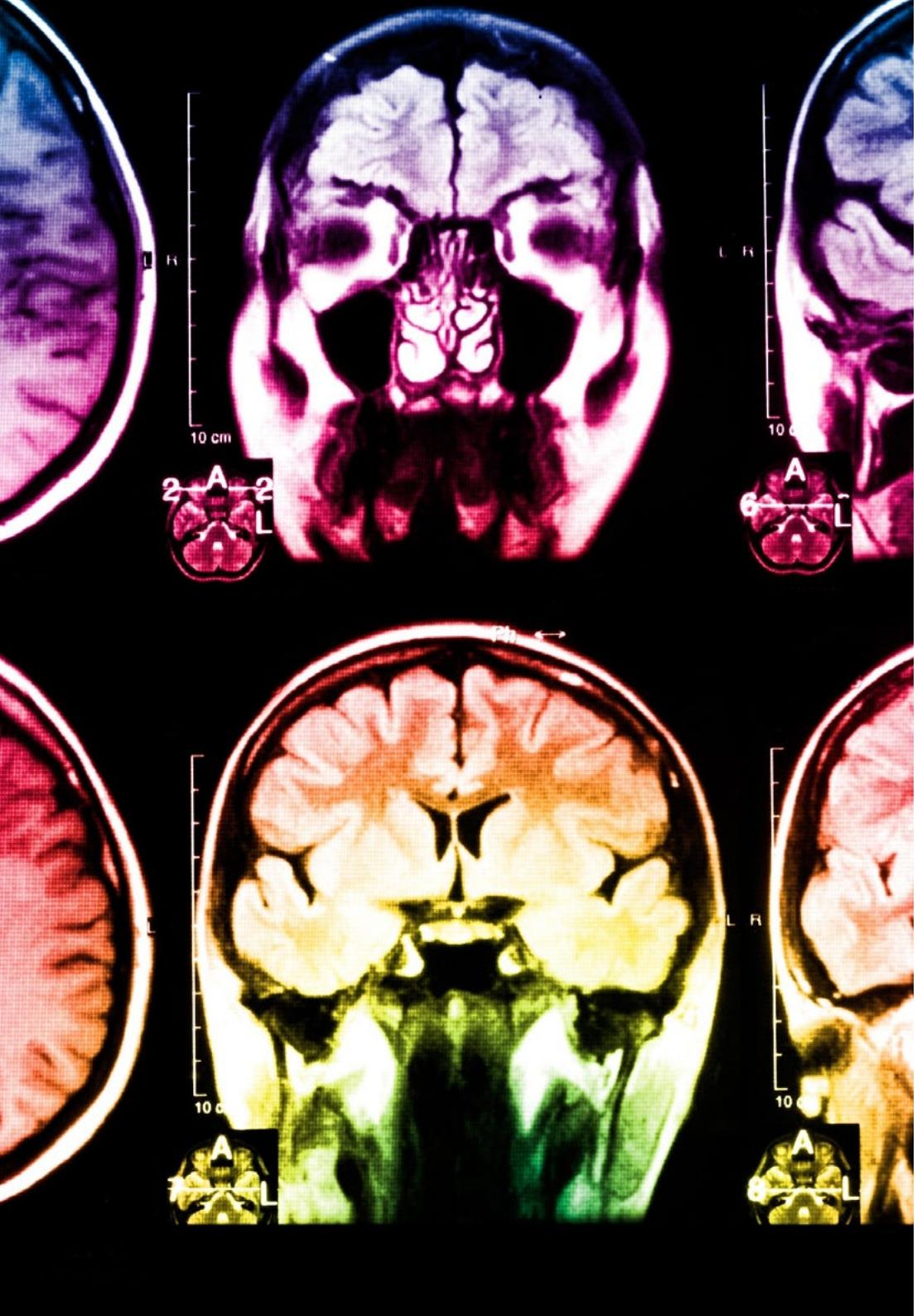
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

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.

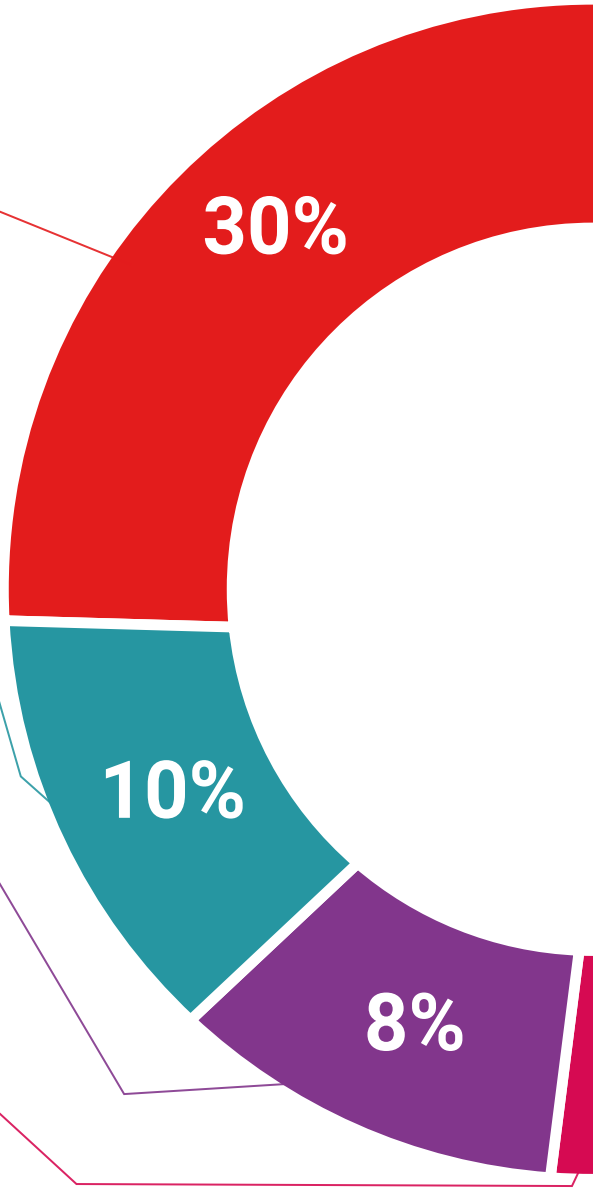
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

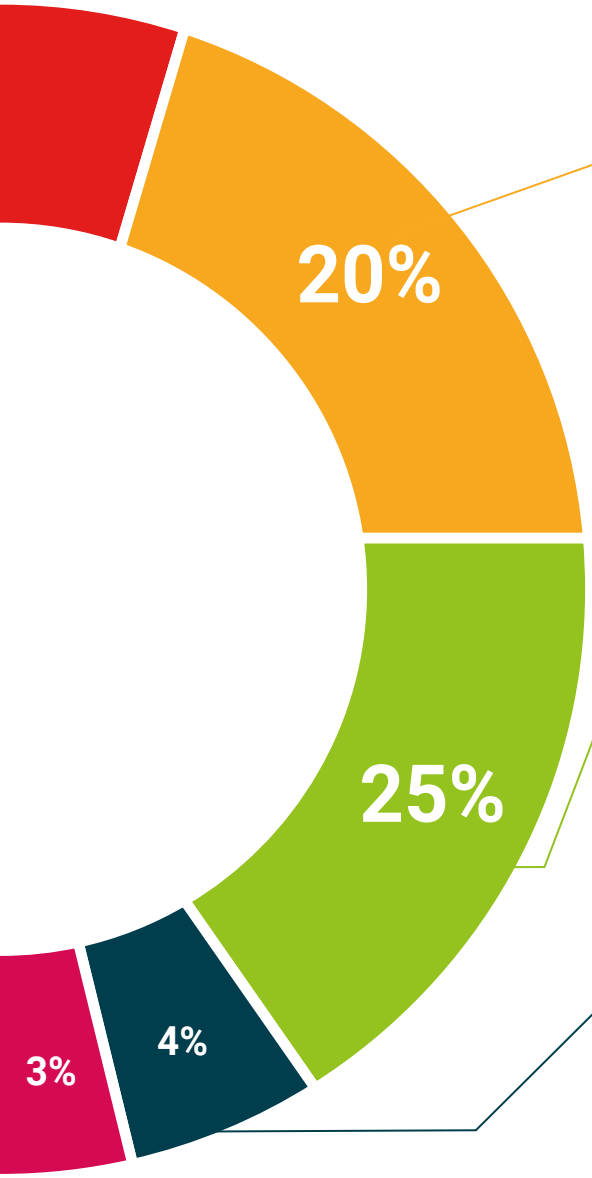
Practising Skills and Abilities

They will carry out activities to develop specific 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.

05

Certificate

The Postgraduate Certificate in Digital Representation Techniques guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.

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

This **Postgraduate Certificate in Digital Representation Techniques** 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 Certificate** issued by **TECH Technological University** via tracked delivery*.

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

Title: **Postgraduate Certificate in Digital Representation Techniques**

Official N. of Hours: **300 h.**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Awards the following

CERTIFICATE

to

Mr./Ms. _____, with identification number _____.

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Digital Representation Techniques

This is a qualification awarded by this University, equivalent to 300 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

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates

*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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