

# Postgraduate Diploma Digital Product Designer





## Postgraduate Diploma Digital Product Designer

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

Website: [www.techtitute.com/us/design/postgraduate-diploma/postgraduate-diploma-digital-product-designer](http://www.techtitute.com/us/design/postgraduate-diploma/postgraduate-diploma-digital-product-designer)

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# 01

# Introduction

Digitalization has transformed the discipline of design. Many processes that years ago were carried out by hand and with physical and analog tools are now carried out digitally. Therefore, in the specific field of product design, there is a highly-demanded professional profile nowadays: the digital designer. They are in charge of drawing up the plans and other technical guidelines according to which the final product will be manufactured, which is why their role is fundamental for many contemporary companies. This program will provide the professional with all the necessary knowledge and skills to help them become a specialist in this field, deepening their knowledge in aspects such as the technical representation systems. All of this through a 100% online teaching methodology which will allow them to easily combine their work with their studies.





“

*Improve your professional profile and become a great Digital Product Designer thanks to this program, with which you will be able to delve into questions such as the fundamentals of the polygonal modeling”*

Multiple actors, techniques and tools are involved in the development of a product. This process, that was previously carried out in a more artisan and physical way, has evolved to incorporate digital methods which facilitate design tasks. Therefore, one of the job positions that has recently emerged most prominently is that of a digital designer in the field of product design. This professional is in charge of drawing up the plans, sketches and technical specifications that are later used to manufacture the product. All of this using digital techniques.

For this reason, it is a profile that is highly sought after by many companies, but there is a shortage of specialists in this field, so having access to a program like this can mean an immediate career advancement. This fully online program will provide professionals with all the knowledge that a designer needs to become a great expert, as they will delve into issues such as the fundamental layouts in the plane, the basics of polygonal modeling or the modeling of correlated parts, among others.

This Postgraduate Diploma also provides many multimedia resources such as videos, practical activities or master classes which will facilitate learning. Furthermore, the designer will be able to combine their daily work and all their prior commitments with their studies thanks to TECH's 100% online methodology, which is specially structured for practising professionals.

This **Postgraduate Diploma in Digital Product Designer** contains the most complete and up-to-date educational program on the market. The most important features include:

- ◆ Practical cases presented by experts in digital design
- ◆ The graphic, schematic, and eminently practical contents with which they are created, provide scientific and 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
- ◆ Special emphasis on innovative methodologies
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ◆ Access to content from any fixed or portable device with an Internet connection

“

*You are just one step away from becoming a design professional, highly sought after by large companies in the sector. Don't wait any longer and enrol”*

“ *TECH's online methodology will allow you to face your professional projects without interruptions since you will be able to choose when, where and how to study*”

*Videos, practical activities, interactive summaries, master classes, etc. The best educational technology is at your disposal with this program.*

*Learn more about the modeling of correlated parts or technical representation systems thanks to this Postgraduate Diploma.*

The program's teaching staff includes professionals from 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 during the academic year. 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 Diploma in Digital Product Designer is to turn the student into a great specialist in this field which is currently booming. Thus, all the contents and the focus of the degree are aimed at bringing the designer closer to the latest developments in this important sector. It is a field that has undergone many changes in recent years due to the emergence and popularization of numerous digital tools.





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*Enrol now and enjoy immediate professional progress thanks to the complete and innovative content that this program offers you”*



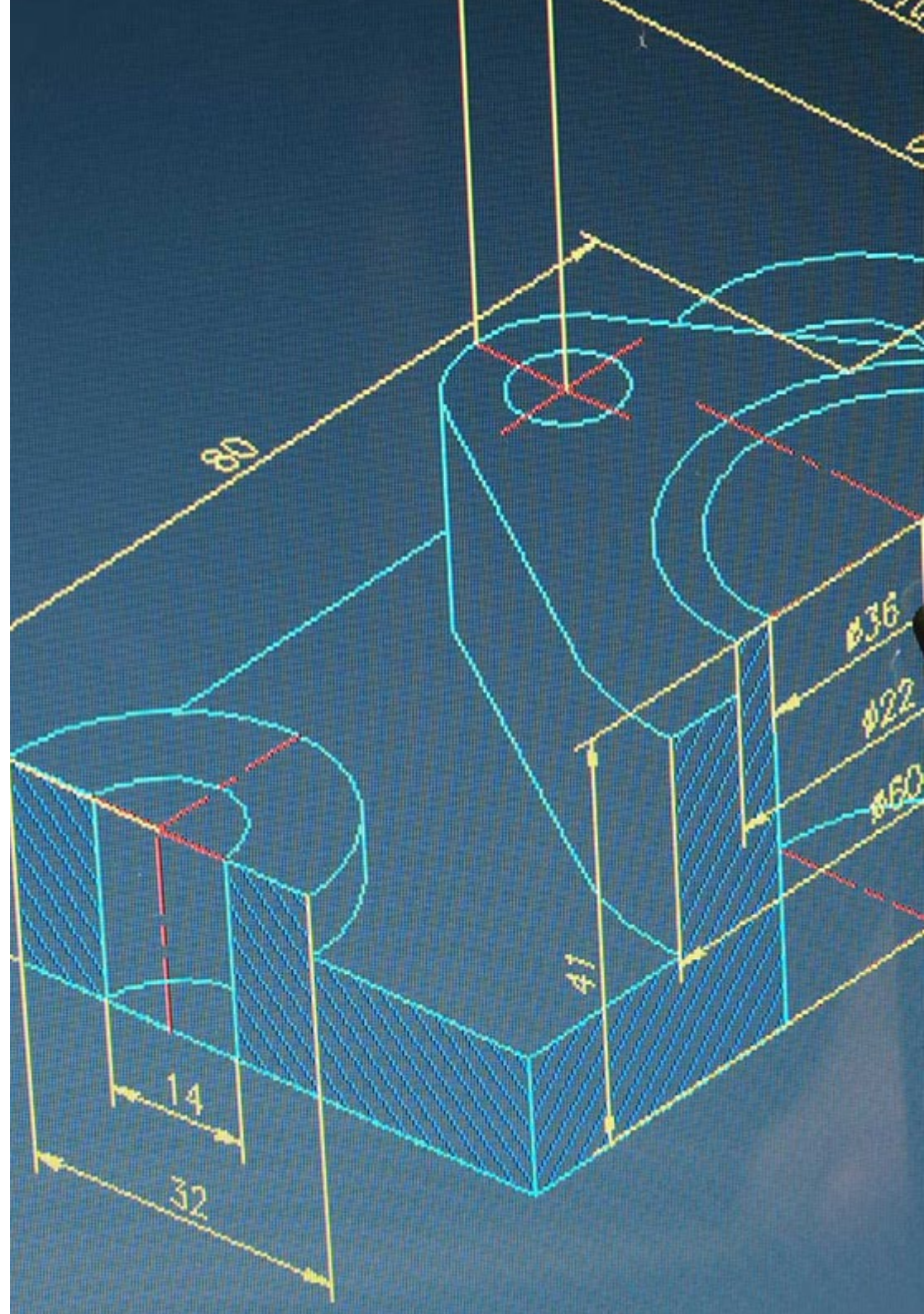
## General objectives

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- ◆ Learn to plan, develop and present artistic productions appropriately, using effective production strategies and with their own creative contributions
- ◆ Acquire theoretical and practical methodological knowledge necessary for the realization of technical projects
- ◆ Analyze and evaluate the materials used in engineering based on their properties
- ◆ Deepen knowledge in the innovation and technology transfer processes for the development of new products and processes and the establishment of a new state of the art

“

*This Postgraduate Diploma will help you to achieve all of your personal and professional goals”*





## Specific objectives

### Module 1. Technical Representation Systems

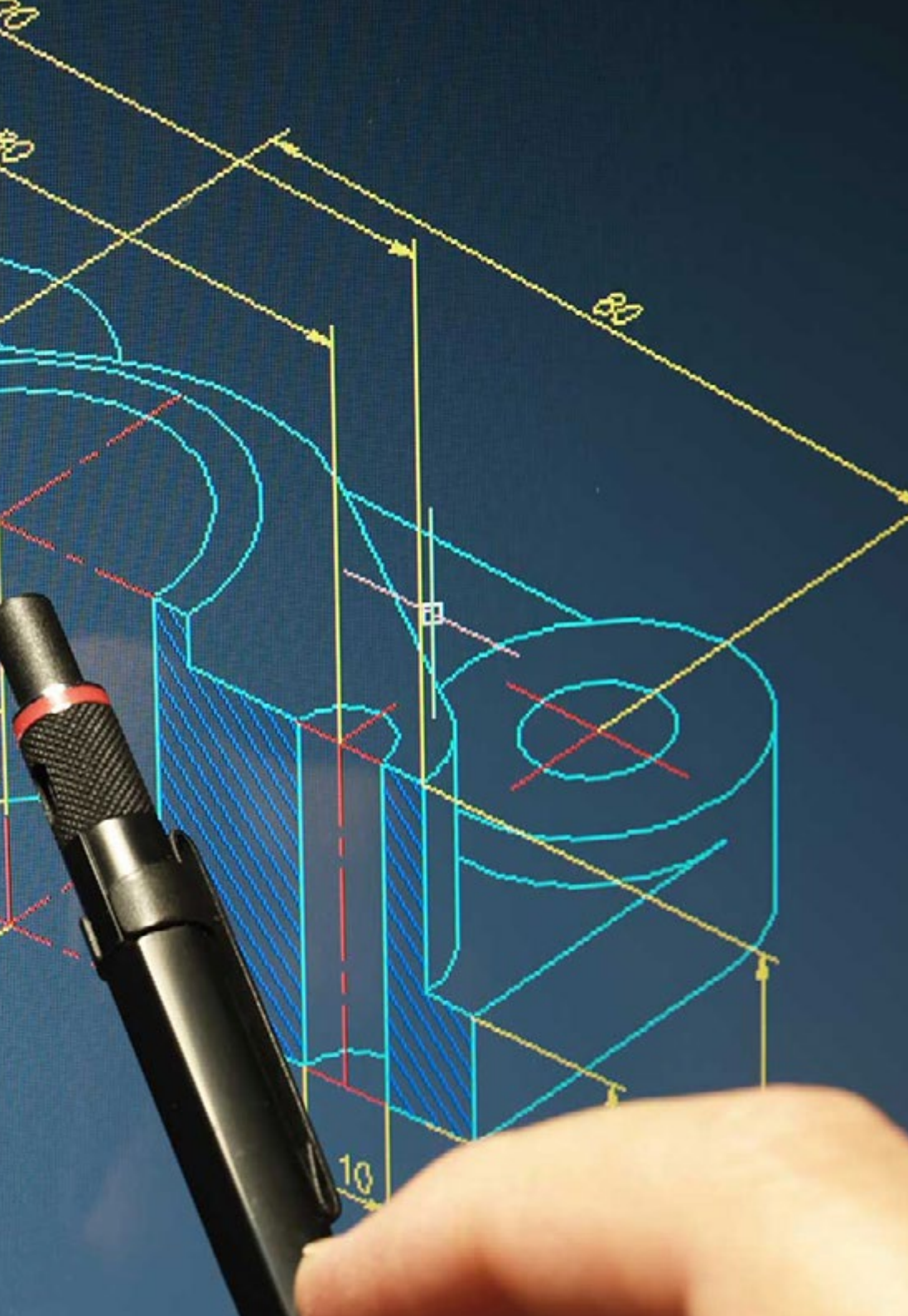
- ◆ Use knowledge of representation systems as a tool in the search for solutions to design problems
- ◆ Develop conception and spatial vision, obtaining new tools that encourage the promotion and generation of ideas
- ◆ Learn to represent objects in the dihedral, axonometric and conical systems as a means of conveying an idea of how to create them

### Module 2. Digital Representation Techniques I

- ◆ Know the fundamental concepts of the 3D form, its geometrical representation, its construction and its application in the design
- ◆ Conceive and represent the visual attributes of objects and space, as well as mastering the techniques of three-dimensional representation, including computer-based techniques
- ◆ Make three-dimensional models with sculptural techniques, and translate them into three-dimensional digital representations, and vice versa, understanding the relationship between both ways of building
- ◆ Integrate the contents of the subject transversally with those provided in other subjects

### Module 3. Digital Representation Techniques II

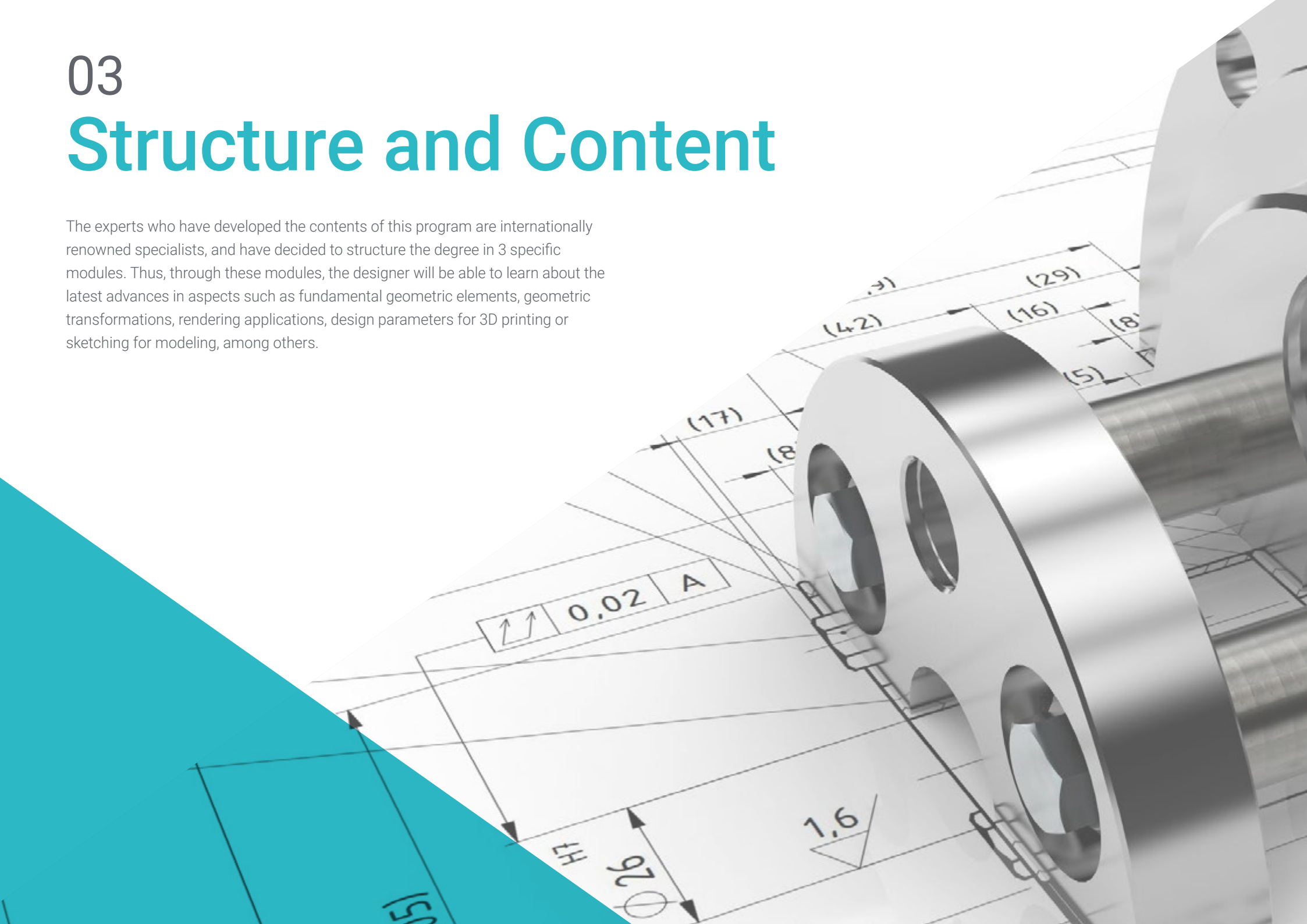
- ◆ Master the aspects of the 3D form, its geometrical representation, its construction and its application in the design
- ◆ Develop the ability to generate virtual models or prototypes of high photorealistic quality
- ◆ Transversally integrate the contents of the subject with those provided in other subjects



# 03

# Structure and Content

The experts who have developed the contents of this program are internationally renowned specialists, and have decided to structure the degree in 3 specific modules. Thus, through these modules, the designer will be able to learn about the latest advances in aspects such as fundamental geometric elements, geometric transformations, rendering applications, design parameters for 3D printing or sketching for modeling, among others.



“

*The most advanced content in digital design can be found here. Make the most of this opportunity and enrol”*

## Module 1. Technical Representation Systems

- 1.1. Introduction to Flat Geometry
  - 1.1.1. The Fundamental Material and Its Use
  - 1.1.2. Fundamental Tracings in the Plane
  - 1.1.3. Polygons. Metric Ratios
  - 1.1.4. Standardization, Lines, Writing and Formats
  - 1.1.5. Standardized Dimensioning
  - 1.1.6. Scales
  - 1.1.7. Technical Representation Systems
    - 1.1.7.1. Types of Projection
      - 1.1.7.1.1. Conical Projection
      - 1.1.7.1.2. Orthogonal Cylindrical Projection
      - 1.1.7.1.3. Oblique Cylindrical Projection
    - 1.1.7.2. Classes of Representation Systems
      - 1.1.7.2.1. Measuring Systems
      - 1.1.7.2.2. Perspective Systems
- 1.2. Fundamental Tracings in the Drawing
  - 1.2.1. Fundamental Geometrical Elements
  - 1.2.2. Perpendicularity
  - 1.2.3. Parallelism
  - 1.2.4. Operations With Segments
  - 1.2.5. Angles
  - 1.2.6. Circumferences
  - 1.2.7. Geometric Places
- 1.3. Geometric Transformations
  - 1.3.1. Isometric
    - 1.3.1.1. Equality
    - 1.3.1.2. Translation
    - 1.3.1.3. Symmetry
    - 1.3.1.4. Turn
  - 1.3.2. Isomorphic
    - 1.3.2.1. Homothecary
    - 1.3.2.2. Similarities
  - 1.3.3. Anamorphic
    - 1.3.3.1. Equivalent
    - 1.3.3.2. Investments
  - 1.3.4. Projective
    - 1.3.4.1. Homology
    - 1.3.4.2. Affine Homology or Affinity
- 1.4. Polygons
  - 1.4.1. Polygon Lines
    - 1.4.1.1. Definition and Types
  - 1.4.2. Triangles
    - 1.4.2.1. Elements and Classification
    - 1.4.2.2. Construction of Triangles
    - 1.4.2.3. Notable Lines and Points
  - 1.4.3. Quadrilaterals
    - 1.4.3.1. Elements and Classification
    - 1.4.3.2. Parallelograms
  - 1.4.4. Regular Polygons
    - 1.4.4.1. Definition
    - 1.4.4.2. Construction
  - 1.4.5. Perimeters and Areas
    - 1.4.5.1. Definition. Measuring Areas
    - 1.4.5.2. Surface Units
  - 1.4.6. Polygon Areas
    - 1.4.6.1. Quadrilateral Areas
    - 1.4.6.2. Triangle Areas
    - 1.4.6.3. Regular Polygon Areas
    - 1.4.6.4. Irregular Areas

- 1.5. Tangents and Links. Technical and Conic Curves
  - 1.5.1. Tangents, Links and Polarity
    - 1.5.1.1. Tangents
      - 1.5.1.1.1. Tangency Theorems
      - 1.5.1.1.2. Drawings of Tangent Lines
      - 1.5.1.1.3. Straight and Curved Links
    - 1.5.1.2. Polarity at the Circumference
      - 1.5.1.2.1. Drawings of Tangent Lines
  - 1.5.2. Technical Curves
    - 1.5.2.1. Ovals
    - 1.5.2.2. Ovoids
    - 1.5.2.3. Spirals
  - 1.5.3. Conical Curves
    - 1.5.3.1. Ellipse
    - 1.5.3.2. Parabola
    - 1.5.3.3. Hyperbola
- 1.6. Dihedral System
  - 1.6.1. General aspects
    - 1.6.1.1. Point and Line
    - 1.6.1.2. The Plane. Intersections
    - 1.6.1.3. Parallelism, Perpendicularity and Distances
    - 1.6.1.4. Plane Changes
    - 1.6.1.5. Turns
    - 1.6.1.6. Reductions
    - 1.6.1.7. Angles
  - 1.6.2. Curves and Surfaces
    - 1.6.2.1. Curves
    - 1.6.2.2. Surfaces
    - 1.6.2.3. Polyhedra
    - 1.6.2.4. Pyramids
    - 1.6.2.5. Pryzm
    - 1.6.2.6. Cone
    - 1.6.2.7. Cylinder
    - 1.6.2.8. Revolution Surfaces
    - 1.6.2.9. Intersection of Surfaces
  - 1.6.3. Shade
    - 1.6.3.1. General aspects
- 1.7. System Boundary
  - 1.7.1. Point, Line and Plane
  - 1.7.2. Intersections and Reductions
    - 1.7.2.1. Reductions
    - 1.7.2.2. Applications
  - 1.7.3. Parallelism, Perpendicularity, Distance and Angles
    - 1.7.3.1. Perpendicularity
    - 1.7.3.2. Distances
    - 1.7.3.3. Angles
  - 1.7.4. Line, Surfaces and Terrains
    - 1.7.4.1. Terrains
  - 1.7.5. Applications
- 1.8. Axonometric System
  - 1.8.1. Orthogonal Axonometry: Point, Line and Plane
  - 1.8.2. Orthogonal Axonometry: Intersections, Reductions and Perpendicularity
    - 1.8.2.1. Reductions
    - 1.8.2.2. Perpendicularity
    - 1.8.2.3. Flat Shapes
  - 1.8.3. Orthogonal Axonometry: Body Perspective
    - 1.8.3.1. Representation of Bodies
  - 1.8.4. Oblique Axonometry: Abatisms, Perpendicularity
    - 1.8.4.1. Frontal Perspective
    - 1.8.4.2. Reduction and Perpendicularity
    - 1.8.4.3. Flat Figures
  - 1.8.5. Oblique Axonometry: Body Perspective
    - 1.8.5.1. Shade

- 1.9. Conical System
  - 1.9.1. Conical or Central Projection
    - 1.9.1.1. Intersections
    - 1.9.1.2. Parallelisms
    - 1.9.1.3. Reductions
    - 1.9.1.4. Perpendicularity
    - 1.9.1.5. Angles
  - 1.9.2. Lineal Perspective
    - 1.9.2.1. Auxiliary Constructions
  - 1.9.3. Lines and Surfaces Perspective
    - 1.9.3.1. Practical Perspective
  - 1.9.4. Perspective Methods
    - 1.9.4.1. Tilted Frame
  - 1.9.5. Prospective Restitutions
    - 1.9.5.1. Reflexes
    - 1.9.5.2. Shade
- 1.10. The Sketch
  - 1.10.1. Objectives of the Sketch
  - 1.10.2. Proportion
  - 1.10.3. Sketch Process
  - 1.10.4. Point of View
  - 1.10.5. Labeling and Graphic Symbols
  - 1.10.6. Measurement

## Module 2. Digital Representation Techniques I

- 2.1. Introduction to 3D Modeling
  - 2.1.1. Computer Modeling Basics
  - 2.1.2. Modeling Context
  - 2.1.3. Modeling Methods
  - 2.1.4. Description of Modeling Software
  - 2.1.5. Comparison of Modeling Software
- 2.2. Classic Polygonal Modeling
  - 2.2.1. Tools
  - 2.2.2. Creation of Objects
  - 2.2.3. Shapes
  - 2.2.4. Surgery
  - 2.2.5. Subdivision Modeling
- 2.3. Digital Sculpture
  - 2.3.1. Fundamentals
  - 2.3.2. Tools
  - 2.3.3. Surgery
  - 2.3.4. Creation of Sculptures
- 2.4. Materials and Textures
  - 2.4.1. Fundamentals
  - 2.4.2. Materials
  - 2.4.3. Texture
  - 2.4.4. Unwrapping
- 2.5. Illumination and Cameras
  - 2.5.1. Fundamentals
  - 2.5.2. Types of Illumination
  - 2.5.3. Camera Adjustments
  - 2.5.4. Spatial Composition
- 2.6. Rendering
  - 2.6.1. Introduction to Rendering
  - 2.6.2. Applications of Rendering
  - 2.6.3. Patterns for Rendering
  - 2.6.4. Rendering Engines
- 2.7. 3D Animation
  - 2.7.1. Fundamentals
  - 2.7.2. Kinematics
  - 2.7.3. Controllers
- 2.8. Video Editing
  - 2.8.1. Introduction to Composition
  - 2.8.2. Editing Tools
  - 2.8.3. Video Post-Production



- 2.9. Virtual Representation. Applying Techniques
  - 2.9.1. Simulation and Virtual Walks
  - 2.9.2. Technical Representation and Virtual Projects
  - 2.9.3. Virtual Representation in the Industry
- 2.10. 3D Impression
  - 2.10.1. Introduction to 3D Impression
  - 2.10.2. Design Parameters for 3D Impression
  - 2.10.3. Preparation of Archives for 3D Printing

### Module 3. Digital Representation Techniques II

- 3.1. Complex Modeling
  - 3.1.1. Complex Sketches
  - 3.1.2. Complex Operations
  - 3.1.3. Surface Modeling
  - 3.1.4. Veneer
- 3.2. Mechanisms and Components
  - 3.2.1. Design of Components
  - 3.2.2. Sketch of Mechanisms
  - 3.2.3. Modeling of Correlated Parts
  - 3.2.4. Synchronization of Mechanisms
- 3.3. Conceptual Designs
  - 3.3.1. Sketching for Modeling
  - 3.3.2. Digitalization of the Sketch
  - 3.3.3. Presentation Tools
  - 3.3.4. Modeling of Virtual Prototypes
- 3.4. Veneer
  - 3.4.1. Fundamentals of Metal Sheet Veneer
  - 3.4.2. Properties of the Materials
  - 3.4.3. Veneer Development
  - 3.4.4. Veneer Modeling
- 3.5. Plans
  - 3.5.1. Regulations
  - 3.5.2. Exploded-View Drawing
  - 3.5.3. Overview Plan
  - 3.5.4. Exploded
- 3.6. Digital Materials and Textures
  - 3.6.1. Application of Materials and Textures
  - 3.6.2. Brightness and Shadows
  - 3.6.3. Reflection and Surroundings
- 3.7. Rendering
  - 3.7.1. Design and Strategy of Rendering
  - 3.7.2. Preparation of the Model and the Scene
  - 3.7.3. Light
  - 3.7.4. Cameras
  - 3.7.5. Rendering Engines
- 3.8. Photorealistic Image Processing
  - 3.8.1. Image Editing
  - 3.8.2. Photomontages
  - 3.8.3. Realism and Conceptual Representation
- 3.9. Augmented Reality and Virtual Reality
  - 3.9.1. Platforms and Applications
  - 3.9.2. Presentation of the Product in Virtual Reality
  - 3.9.3. Presentation of the Product in Augmented Reality
- 3.10. Combined Presentation
  - 3.10.1. Valorization of Resources
  - 3.10.2. Technique Selection and Applications
  - 3.10.3. Combined Proposal



*The future of design is based on professional profiles such as the digital product designer. Don't wait any longer and make progress in your career"*

# 04

# Methodology

This training program offers 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"*

## At TECH we use the Case Method

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

“

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



*We are the first online university to combine Harvard Business School case studies with a 100% online learning system based on repetition.*



### A learning method that is different and innovative

This intensive Design program at TECH Technological University will prepare you to face all the challenges in this area, both nationally and internationally. We are committed to promoting your personal and professional growth, the best way to strive for success, that is why at TECH you will use Harvard case studies, with which we have a strategic agreement that allows us to provide our students with material from the best university the world.

“*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 by 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.

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

## Relearning Methodology

Our university is the first in the world to combine the Harvard University case studies method with a 100% online learning system based on repetition, combining 8 different didactic elements in each lesson.

We enhance Harvard case studies 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 university 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.



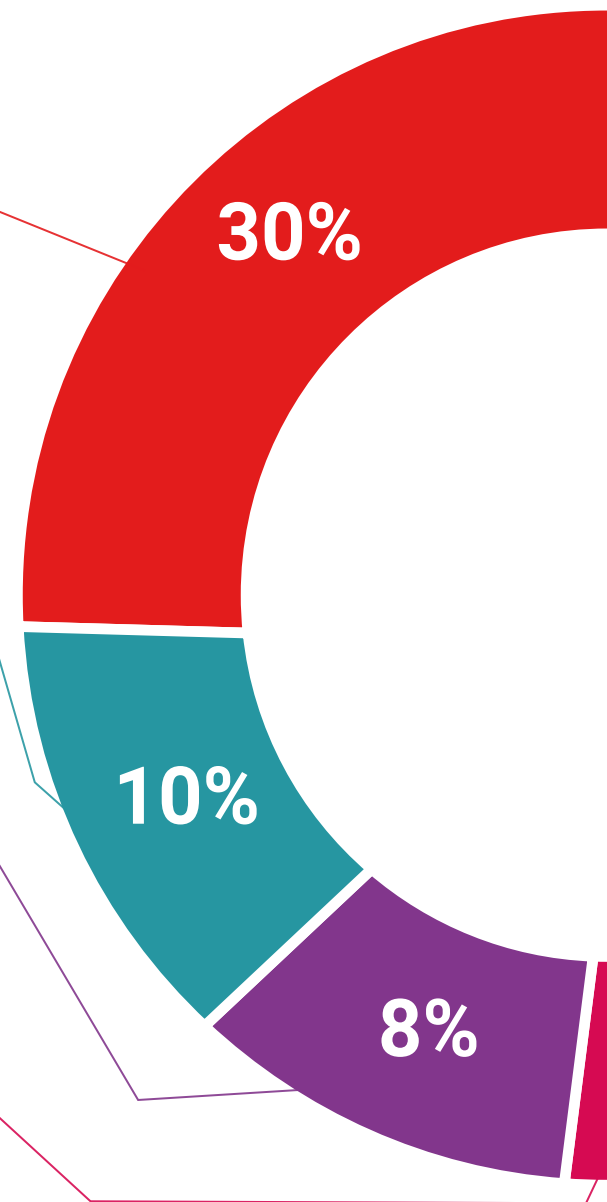
### Practising Skills and Abilities

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 we live in.



### Additional Reading

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







#### Case Studies

They will complete a selection of the best case studies in the field used at Harvard. Cases that are presented, analyzed, and supervised by the best senior management 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 multimedia content presentation training Exclusive system 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 your goals.



# 05 Certificate

The Postgraduate Diploma in Digital Product Designer guarantees you, in addition to the most rigorous and up-to-date training, access to a Postgraduate Diploma issued by TECH Technological University.



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*Successfully complete this training program  
and receive your university certificate  
without travel or laborious paperwork”*

This **Postgraduate Diploma in Digital Product Designer** 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 diploma 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 from career evaluation committees.

Title: **Postgraduate Diploma in Digital Product Designer**

Official N° of Hours: **450 h.**



\*Apostille Convention. In the event that the student wishes to have their paper diploma 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 quality  
development language  
classroom



## Postgraduate Diploma Digital Product Designer

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