Postgraduate Certificate

Innovation in Design Processes and Artificial Intelligence

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Postgraduate Certificate
Innovation in Design Processes and Artificial Intelligence

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

Website: **www.techtitute.com/pk/artificial-intelligence/postgraduate-certificate/innovation-design-processes-artificial-intelligence**

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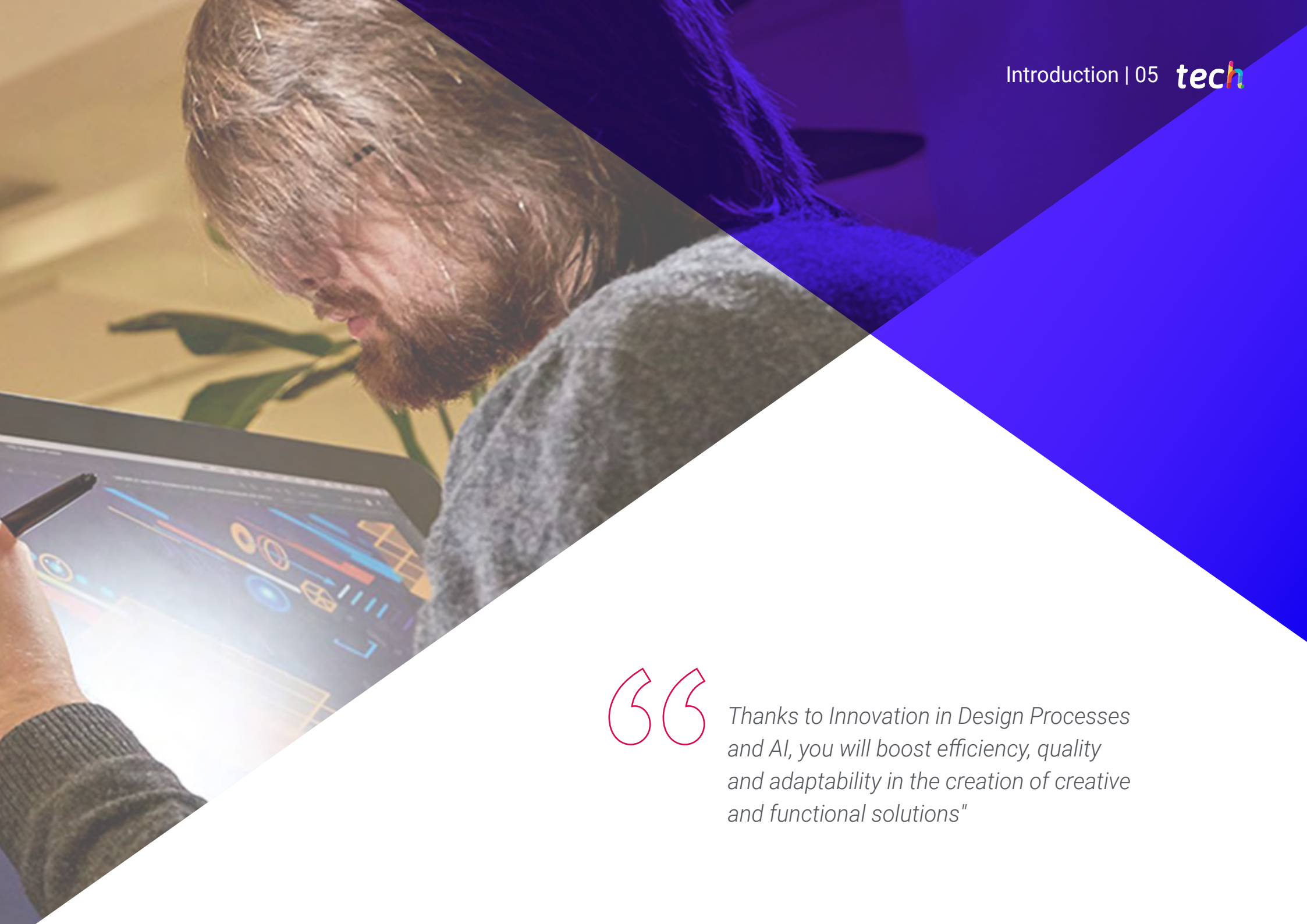
01

Introduction

Innovation in Design Processes and Artificial Intelligence (AI) allows an efficient optimization of design methods, streamlining creative processes and improving precision in the conception of products or solutions. In this way, AI facilitates the exploration of multiple scenarios and the generation of alternatives, which broadens the spectrum of possibilities for designers. In addition, this combination enables the early identification of potential problems, reducing costs and time associated with late corrections. For all this, TECH has conceived this revolutionary program, based on the innovative Relearning method, which focuses on the repetition of essential ideas to achieve effective learning, without the extra effort of continuous memorization.



Thanks to Innovation in Design Processes and AI, you will boost efficiency, quality and adaptability in the creation of creative and functional solutions"

In the field of Design, the implementation of innovative technologies, such as Artificial Intelligence (AI), makes it possible to accelerate the development cycle, optimize creativity and facilitate continuous iteration. AI, on the other hand, provides an additional layer of intelligence and automation, improving decision-making and optimizing the adaptability of designs to changing needs. The combination of both disciplines enhances the ability to anticipate trends, personalize experiences and generate more intuitive solutions.

This is how this Postgraduate Certificate in Innovation in Design Processes and AI is born, representing a deep immersion in the intersection between AI and process optimization within industrial design. In this way, the designer will delve into the detailed analysis of how Artificial Intelligence impacts and transforms design processes, highlighting fundamental areas such as environmental impact simulation and the integration of the Internet of Things (IoT).

Likewise, graduates will acquire a comprehensive understanding of how these technologies revolutionize the way designs are conceptualized, developed and executed. In this sense, the focus will be on empowering future professionals with the necessary skills to lead innovation, combining human creativity with the potential of Artificial Intelligence to improve efficiency, sustainability and quality in contemporary industrial design. In addition, this program will enable them to master the key tools and strategies to meet the challenges and seize the opportunities offered by this convergence between AI and Design.

This is how TECH has created a rigorous academic program, backed by the innovative Relearning method. This educational approach focuses on reiterating the essential principles to ensure a complete understanding of the material. Accessibility will also be key, as an electronic device with an Internet connection is all that is needed to access the content anytime, anywhere, freeing students from attending in person or following fixed schedules.

The **Postgraduate Certificate in Innovation in Design Processes and Artificial Intelligence** contains the most complete and up-to-date program on the market Its most notable features are:

- The development of case studies presented by experts in Innovation in Design Processes and AI
- The graphic, schematic and practical contents of the book provide technical and practical information on those 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

You will foster customization and precise adaptation to specific user needs, resulting in more end-user-centric products"

Enroll now! You will drive effective complex problem solving, bridging the gap between human creativity and the analytical power of Artificial Intelligence"

Through the synergy between Design and AI, you will contribute to the constant evolution of products and services, generating a positive impact on both business competitiveness and end-user satisfaction.

With this 100% online Postgraduate Certificate, you will delve into the human-robot collaborative design, to move forward with innovative projects.

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 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 during the academic year For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

02

Objectives

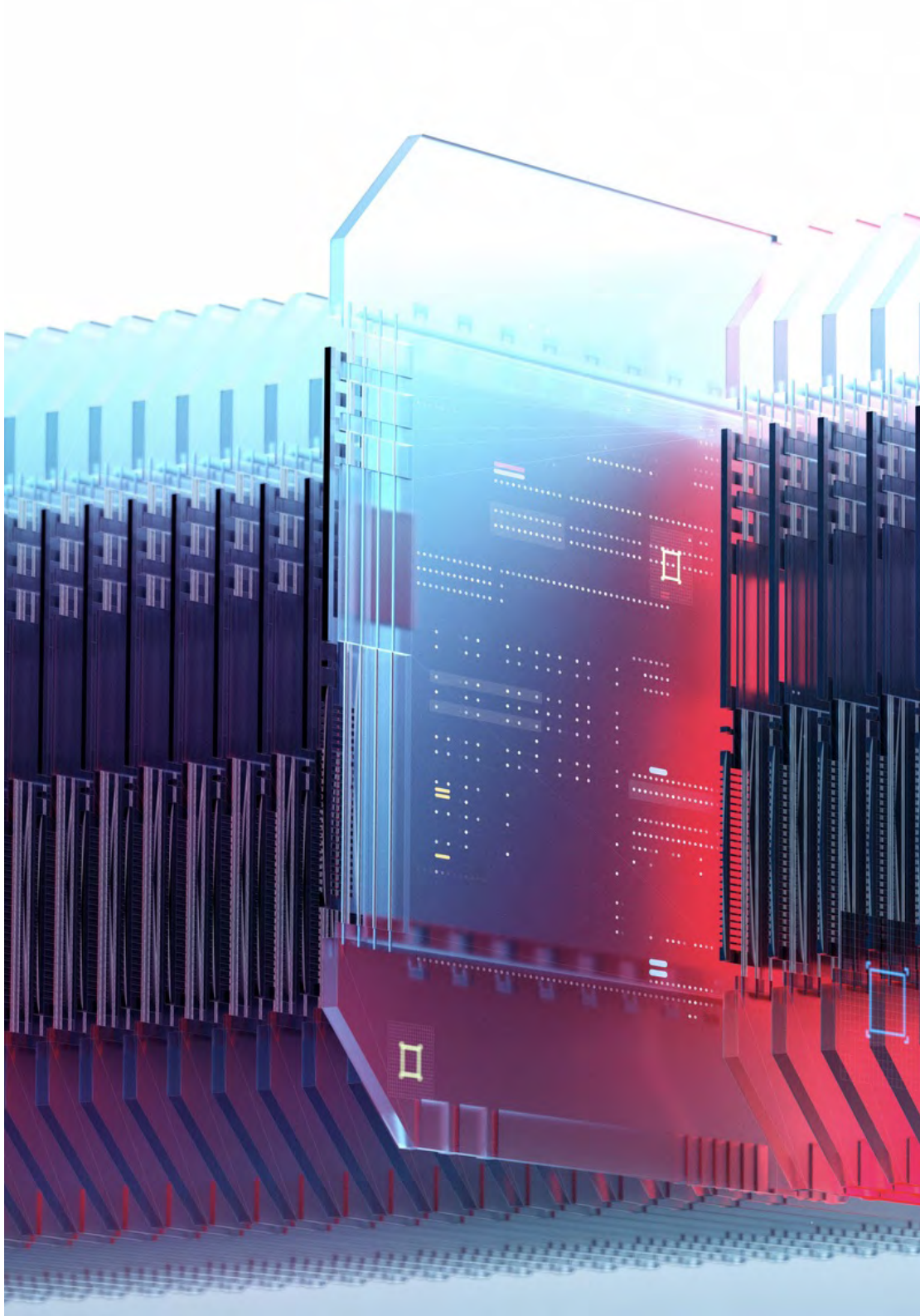
This academic program aims to transcend conventional boundaries, empowering designers to become leaders of innovation, merging human creativity with cutting-edge AI technology. In this way, through a comprehensive and practical approach, professionals will be equipped with the necessary skills and knowledge to not only understand, but also shape the future of Design. In this context, this Postgraduate Certificate is the training ground where imagination meets technology, driving the ability to generate disruptive and sustainable solutions that positively impact today's world.

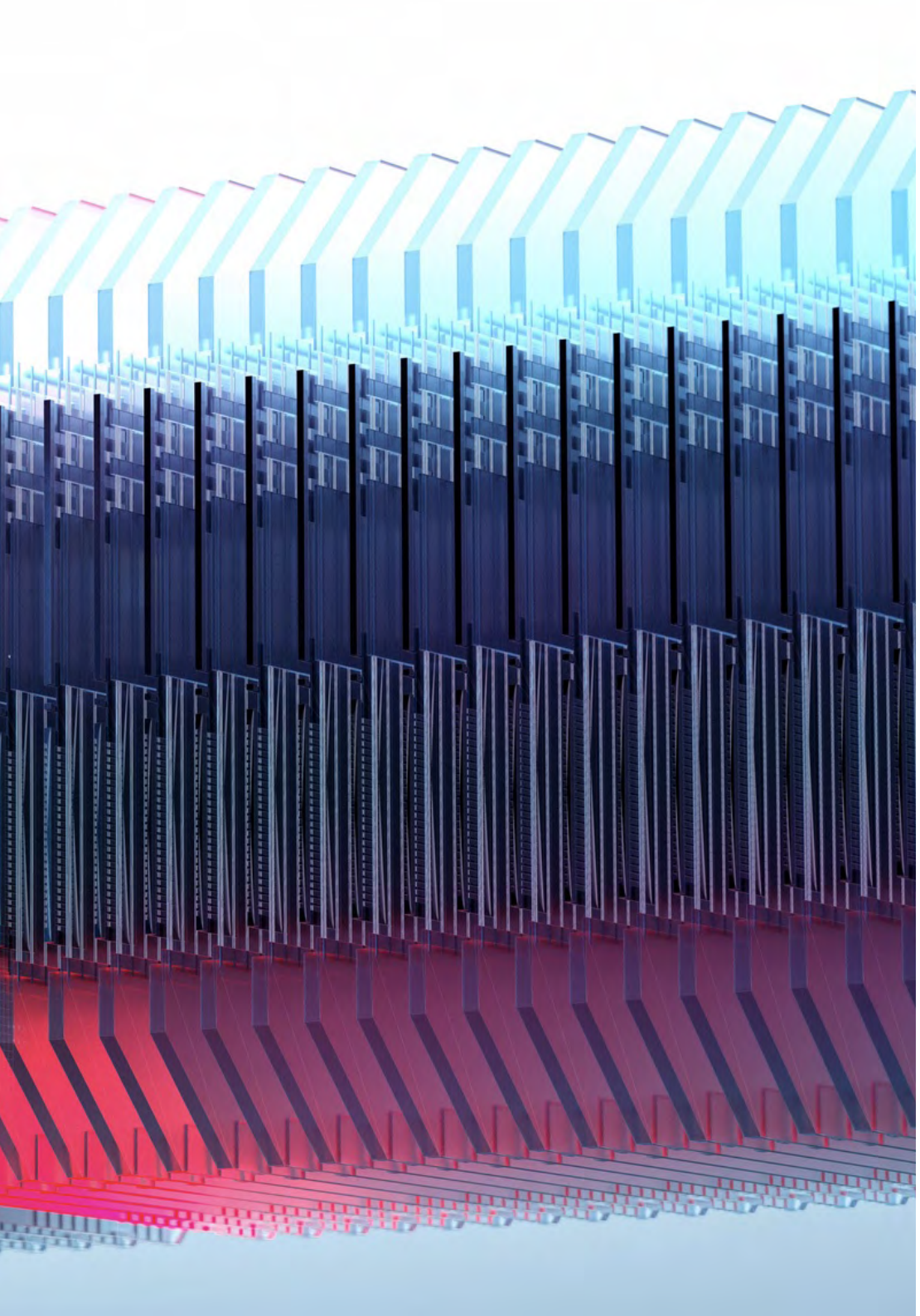
Unleash your potential and redefine the limits of innovation! You will address the relationships between Artificial Intelligence and process optimization in Design"

General Objectives

- Develop skills to implement artificial intelligence tools in design projects, including automatic content generation, design optimization and pattern recognitio
- Critically analyze the challenges and opportunities when implementing personalized designs in industry using Artificial Intelligence
- Understand the transformative role of Artificial Intelligence in design and manufacturing process innovation

You will apply the full potential of AI effectively in the conceptualization, development and execution of more efficient, sustainable and high quality designs"





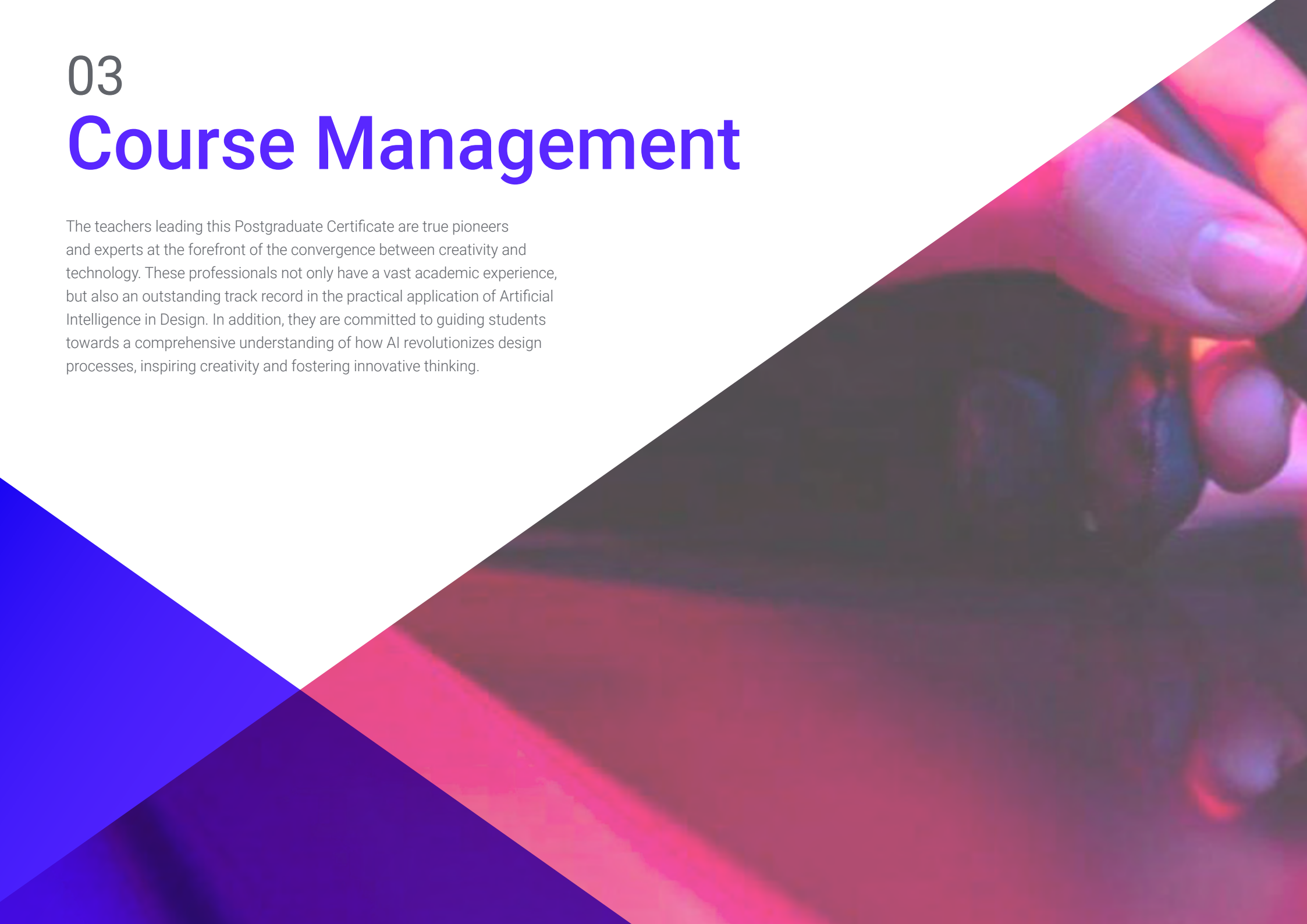
Specific Objectives

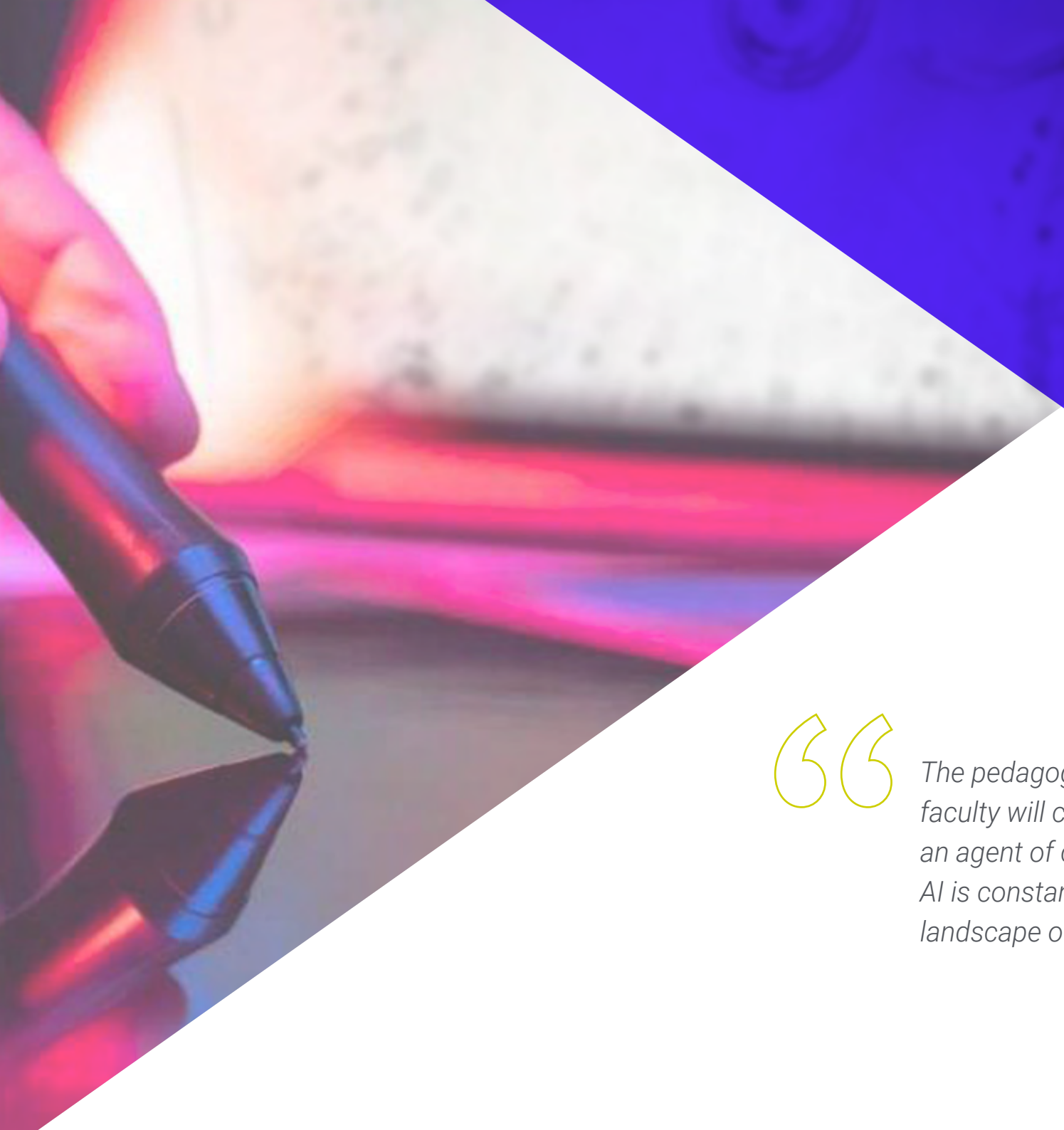
- Understand the transformative role of AI in design and manufacturing process innovation
- Implement mass customization strategies in production through Artificial Intelligence, adapting products to individual needs
- Apply AI techniques to minimize waste in the Design process, contributing to more sustainable practices
- Develop practical skills to apply AI techniques to improve industrial and design processes
- Encourage creativity and exploration during design processes, using AI as a tool to generate innovative solutions

03

Course Management

The teachers leading this Postgraduate Certificate are true pioneers and experts at the forefront of the convergence between creativity and technology. These professionals not only have a vast academic experience, but also an outstanding track record in the practical application of Artificial Intelligence in Design. In addition, they are committed to guiding students towards a comprehensive understanding of how AI revolutionizes design processes, inspiring creativity and fostering innovative thinking.





The pedagogical approach of the faculty will challenge you to become an agent of change in a world where AI is constantly redefining the landscape of Design and innovation"

Management

Dr. Peralta Martín-Palomino, Arturo

- CEO and CTO at Prometeus Global Solutions
- CTO at Korporate Technologies
- CTO at AI Shephers GmbH
- Consultant and Strategic Business Advisor at Alliance Medical
- Director of Design and Development at DocPath
- PhD in Psychology from the University of Castilla - La Mancha
- PhD in Economics, Business and Finance from the Camilo José Cela University
- PhD in Psychology from University of Castilla – La Mancha
- Professional Master's Degree in Executive MBA by the Isabel I University
- Professional Master's Degree in Sales and Marketing Management, Isabel I University
- Expert Master's Degree in Big Data by Hadoop Training
- Professional Master's Degree in Advanced Information Technologies from the University of Castilla - La Mancha
- Member of: SMILE Research Group

Mr. Maldonado Pardo, Chema

- Graphic Design Specialist
- Graphic Designer at DocPath Document Solutions S.L .
- Founding Partner and Head of the Design and Advertising Department at D.C.M. Difusión Integral de Ideas, C.B. Head of the Design and Digital Printing Department at Ofipaper, La Mancha S.L.
- Graphic Designer in Ático, Estudio Gráfico
- Graphic Designer and Craftsman Printer at Lozano Artes Gráficas
- Layout and Graphic Designer in Gráficas Lozano
- ETSI Telecommunications by the Polytechnic University of Madrid
- ETS Computer Systems ETSI by the University of Castilla-La Mancha

Professors

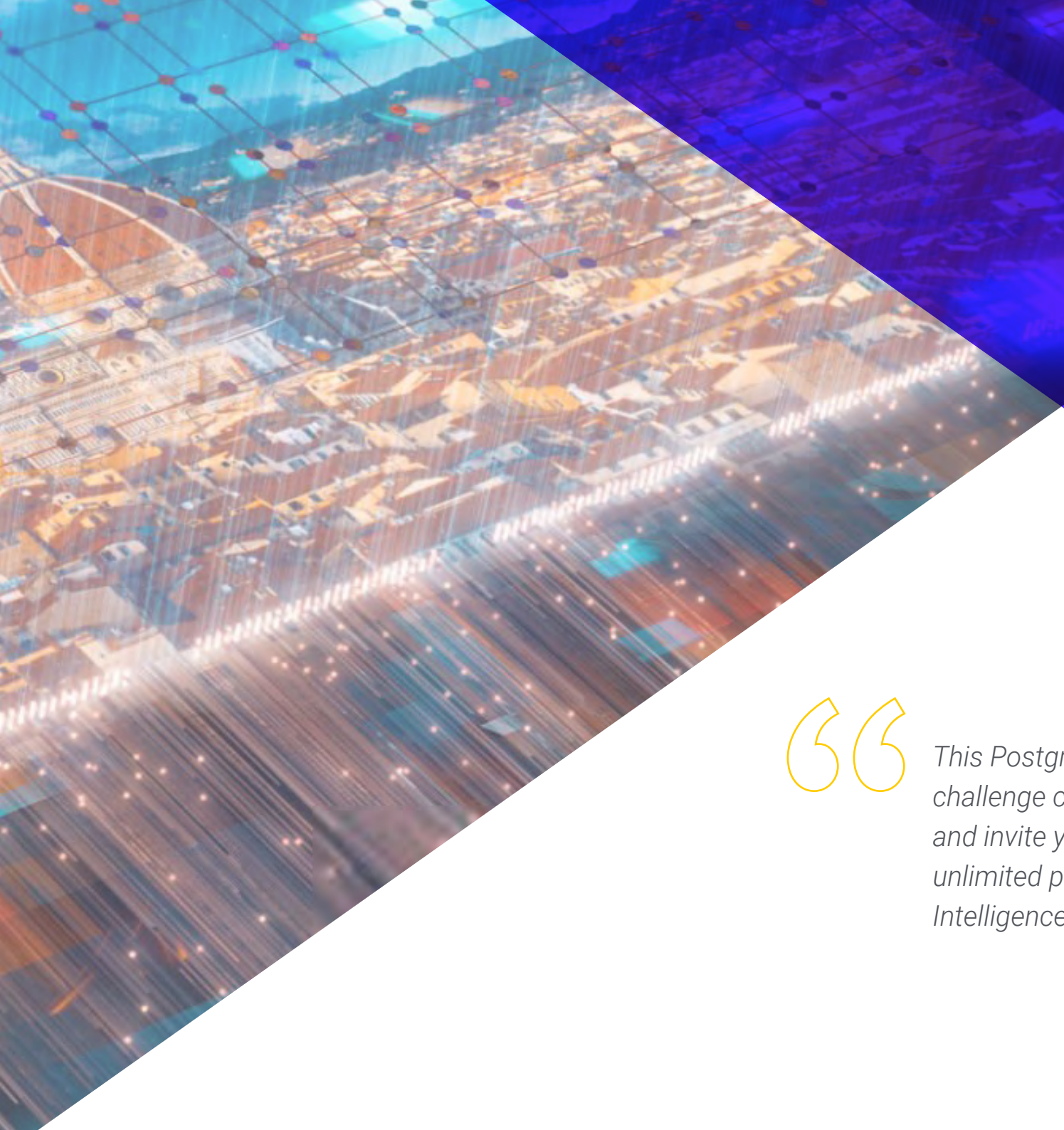
Ms. Parreño Rodríguez, Adelaida

- *Technical Developer & Energy Communities Engineer* at the University of Murcia
- *Manager in Research & Innovation in European Projects* at the University of Murcia
- *Technical Developer & Energy/Electrical Engineer & Researcher* in PHOENIX Project and FLEXUM (ONENET) Project
- Content Creator in Global UC3M Challenge
- Ginés Huertas Martínez Award (2023)
- Professional Master's Degree in Renewable Energies from the Polytechnic University of Cartagena
- Degree in Electrical Engineering (bilingual) from Carlos III University of Madrid

04

Structure and Content

Through a carefully designed syllabus, designers will cover from the theoretical foundations to the practical application of AI in Design. The contents will explore key areas such as environmental impact simulation, the integration of the Internet of Things (IoT) and predictive analytics in the design process. In addition, an interdisciplinary approach will be fostered that will allow professionals to develop technical and strategic skills, preparing them to lead innovation with a holistic understanding OF how AI can enhance efficiency, sustainability and quality in design.



This Postgraduate Certificate will challenge conventional boundaries and invite you to explore the unlimited potential of Artificial Intelligence in the world of Design"

Module 1. Innovation in Design and AI Processes

1.1. Optimization of Manufacturing Processes with AI Simulations
- 1.1.1. Introduction to Manufacturing Process Optimization
- 1.1.2. AI Simulations for Production Optimization
- 1.1.3. Technical and Operational Challenges in the Implementation of AI Simulations
- 1.1.4. Future Perspectives: Advances in Process Optimization with AI

1.2. Virtual Prototyping: Challenges and Benefits
- 1.2.1. Importance of Virtual Prototyping in Design
- 1.2.2. Tools and Technologies for Virtual Prototyping
- 1.2.3. Challenges in Virtual Prototyping and Strategies for Overcoming them
- 1.2.4. Impact on Design Innovation and Agility

1.3. Generative Design: Applications in Industry and Artistic Creation
- 1.3.1. Architecture and Urban Planning
- 1.3.2. Fashion and Textile Design
- 1.3.3. Design of Materials and Textures
- 1.3.4. Automation in Graphic Design

1.4. Materials and Performance Analysis using Artificial Intelligence
- 1.4.1. Importance of Materials and Performance Analysis in Design
- 1.4.2. Artificial Intelligence Algorithms for Materials Analysis
- 1.4.3. Impact on Design Efficiency and Sustainability
- 1.4.4. Implementation Challenges and Future Applications

1.5. Mass Customization in Industrial Production
- 1.5.1. Transforming Production through Mass Customization
- 1.5.2. Enabling Technologies for Mass Customization
- 1.5.3. Logistical and Scale Challenges of Mass Customization
- 1.5.4. Economic Impact and Innovation Opportunities

1.6. Artificial Intelligence-assisted Design Tools
- 1.6.1. Design Aided Design by Gan Generation (Generative Adversarial Networks)
- 1.6.2. Collective Idea Generation
- 1.6.3. Context-aware Generation
- 1.6.4. Exploration of Non-linear Creative Dimensions

1.7. Human-robot Collaborative Design in Innovative Projects
- 1.7.1. Integration of Robots in Innovative Design Projects
- 1.7.2. Tools and Platforms for Human-Robot Collaboration
- 1.7.3. Challenges in the Integration of Robots in Creative Projects
- 1.7.4. Future Perspectives in Collaborative Design with Emerging Technologies

1.8. Predictive Maintenance of Products: AI Approach
- 1.8.1. Importance of Predictive Maintenance in Extending Product Lifetime
- 1.8.2. *Machine Learning* Models for Predictive Maintenance
- 1.8.3. Practical Implementation in Various Industries
- 1.8.4. Evaluation of the Accuracy and Effectiveness of these Models in Industrial Environments

1.9. Automatic Generation of Typefaces and Visual Styles
- 1.9.1. Basics of Automatic Generation in Typeface Design
- 1.9.2. Practical Applications in Graphic Design and Visual Communication
- 1.9.3. AI-assisted Collaborative Design in the Creation of Typefaces
- 1.9.4. Exploration of Automatic Styles and Trends

1.10. IoT Integration to Monitor Products in Real Time
- 1.10.1. Transformation with IoT Integration in Product Design
- 1.10.2. Sensors and IoT Devices for Real-Time Monitoring
- 1.10.3. Data Analysis and IoT-based Decision Making
- 1.10.4. Implementation Challenges and Future Applications of IoT in Design

Get ready to lead innovation with a holistic understanding of how AI can boost efficiency, sustainability and quality in Design"

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

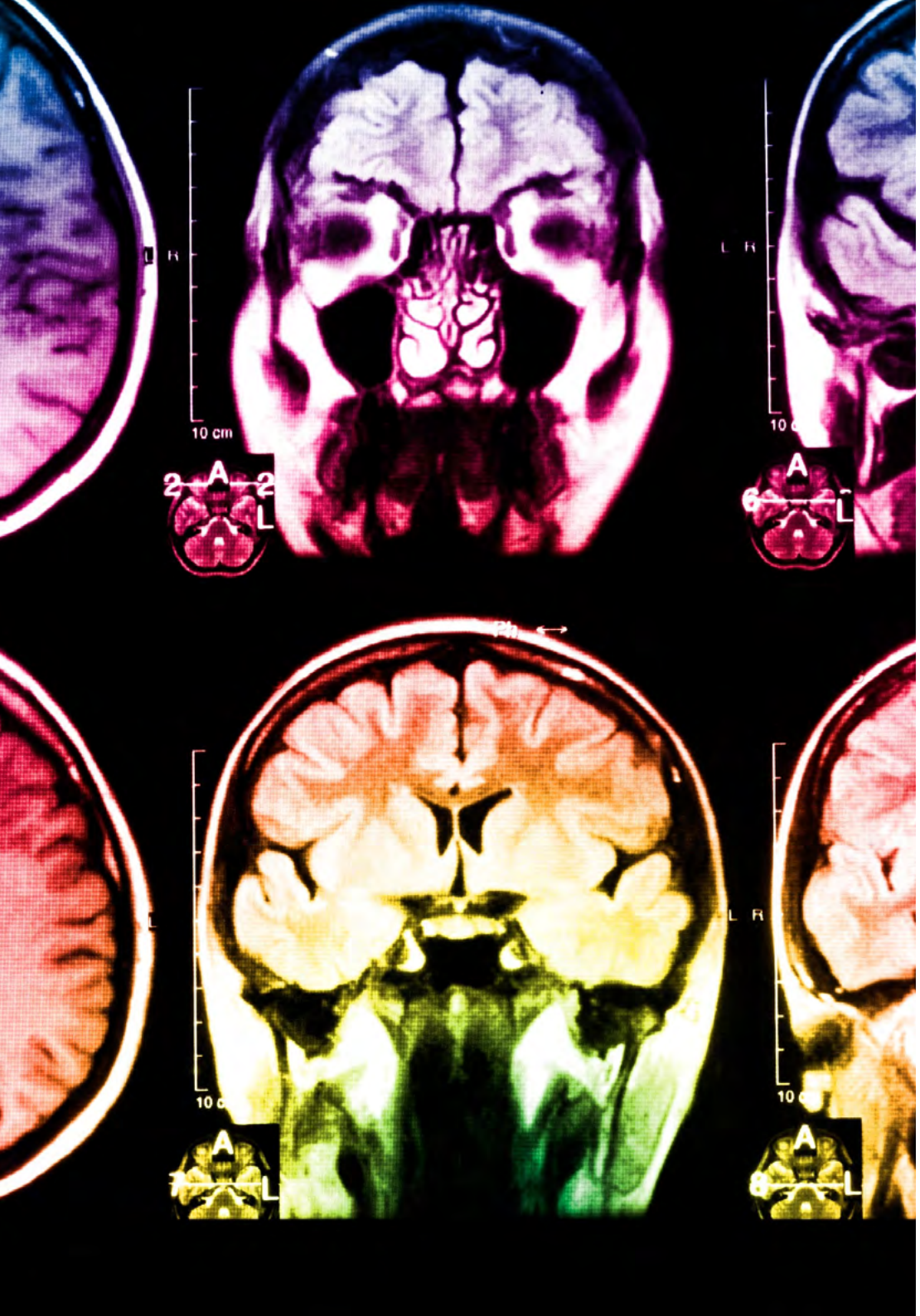
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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.

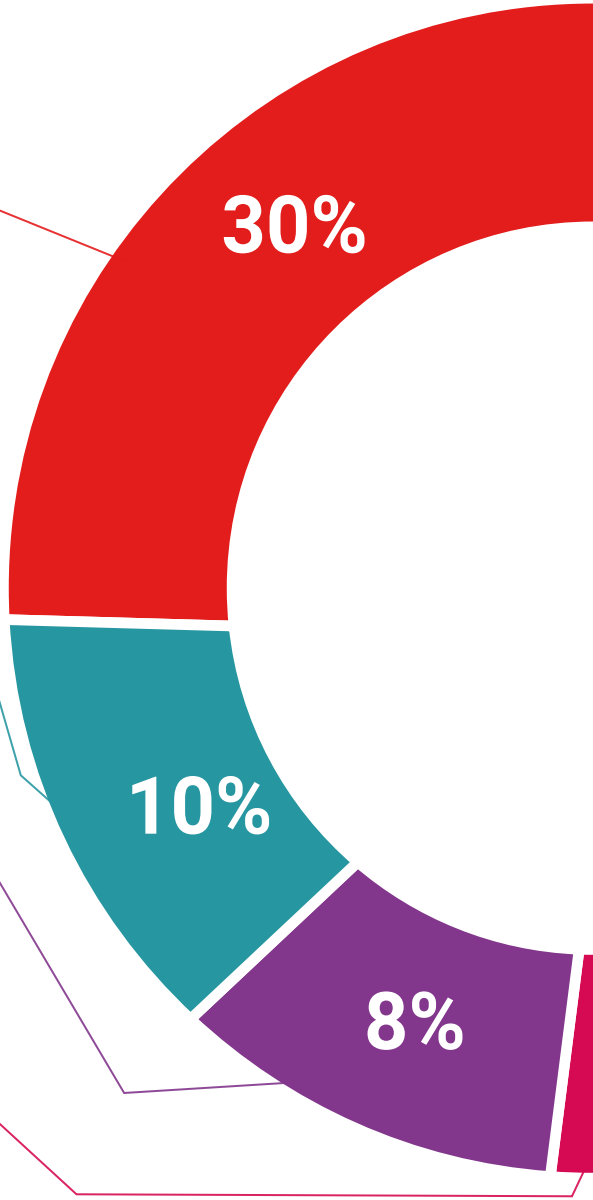
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

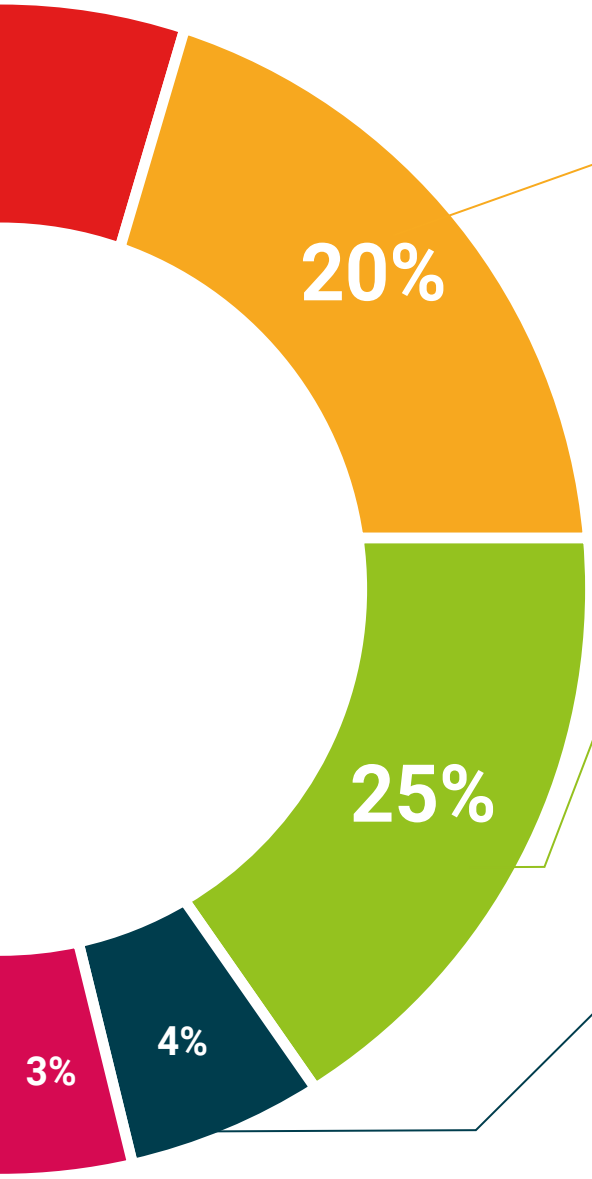
Practising Skills and Abilities

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 Certificate in Innovation in Design Processes and Artificial Intelligence 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 Innovation in Design Processes and Artificial Intelligence** contains the most complete and up-to-date program 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 Innovation in Design Processes and Artificial Intelligence**

Official Nº of Hours: **150 h.**


tech technological university

Awards the following

CERTIFICATE

to

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

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Innovation in Design Processes and Artificial Intelligence

This is a qualification awarded by this University, equivalent to 150 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

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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