Postgraduate Diploma

Artificial Intelligence and User Experience Design

tech *technological university*

Postgraduate Diploma
Artificial Intelligence and User Experience Design

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

Website: **www.techtitute.com/in/design/postgraduate-diploma/postgraduate-diploma-artificial-intelligence-user-experience-design**

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Introduction

One of the main challenges for artists is to make design decisions that do not have a negative environmental impact. In this sense, Artificial Intelligence can be used by specialists to generate sustainable pieces that take into account environmental factors (such as energy efficiency, waste reduction or conservation of natural resources). It should be noted that Artificial Intelligence can analyze multiple variables in order to find optimal solutions that balance functionality with sustainability. Therefore, TECH implements a university program that will address in detail the sustainability in the innovation of design processes using Machine Learning. All under a convenient and flexible 100% online format, taught through the revolutionary methodology of Relearning.
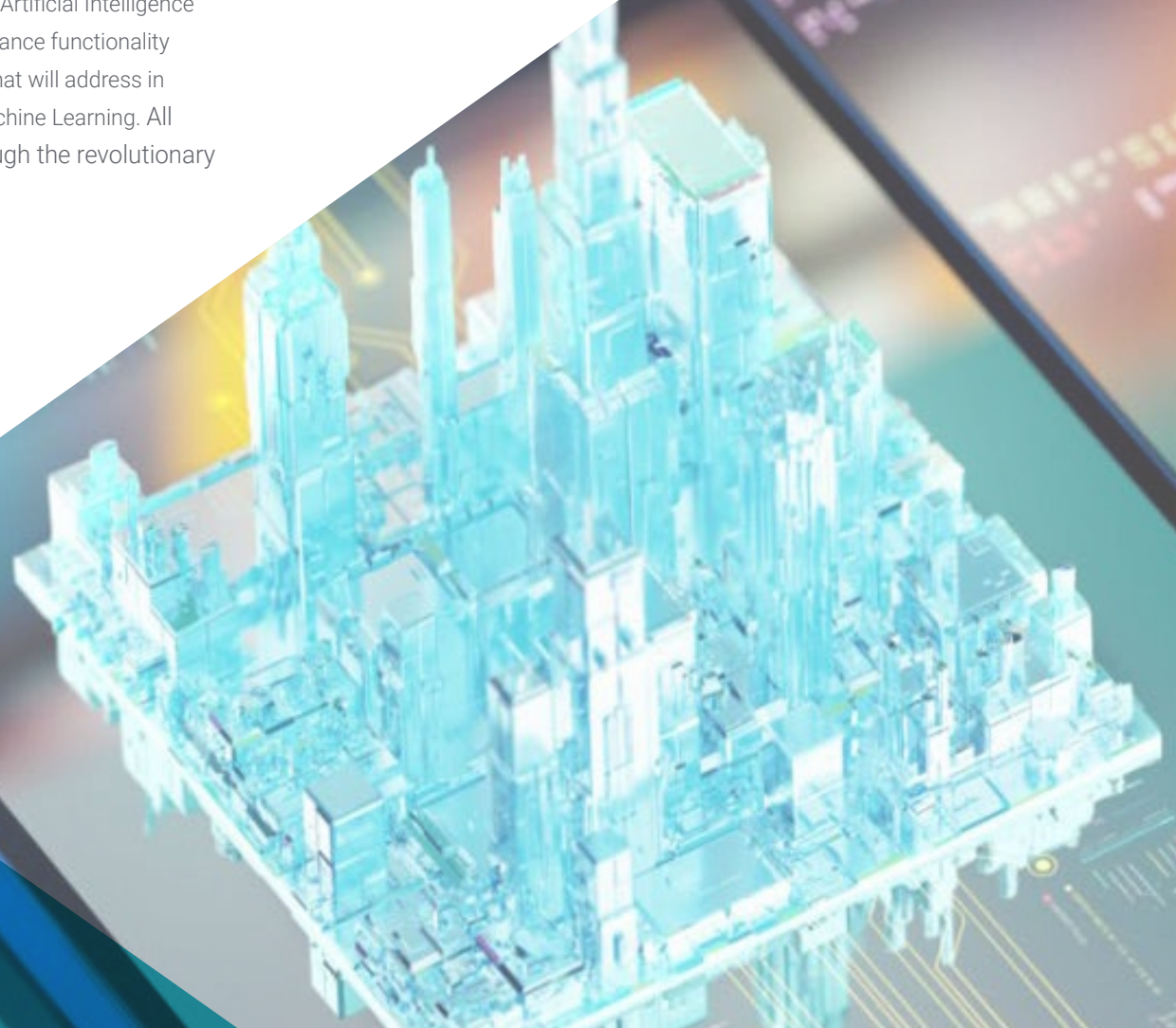
You will improve visual accessibility in graphic design at the best digital university in the world, according to Forbes"

Artificial Intelligence is playing an increasingly important role in User Experience (UX) design by providing new opportunities and approaches to improve audience satisfaction. Thanks to its tools, professionals can analyze both the behaviors and preferences of the audience to offer relevant products. This will improve consumer satisfaction, as they will have access to personalized information. On the other hand, AI-based virtual assistants (such as *chatbots* or voice assistants) optimize interaction with individuals by providing quick responses and real-time assistance.

In this context, TECH launches a Postgraduate Diploma that will analyze in depth the practical applications of Machine Learning in Design. Structured in 3 complete modules, the syllabus will delve into the recommendation algorithms in interface individualization. At the same time, the syllabus will address the main *Machine Learning* models, enabling graduates to predict audience behavior. The didactic contents will also emphasize the relevance of guaranteeing privacy and transparency during the handling of sensitive data. On the other hand, the training will encourage students to carry out sustainable design processes and to make ethical decisions.

The program is based on a 100% online methodology so that students can comfortably complete the program. The only thing they will need to access the academic syllabus is a device with Internet access. In this way, students will be able to access the virtual campus 24 hours a day, from anywhere in the world. It should be noted that this Postgraduate Diploma is based on the cutting-edge *Relearning* system, of which TECH is a pioneer. This teaching method is based on the reiteration of contents to guarantee learning. At the same time, it provides various multimedia resources such as videos to dynamize the contents and contribute solid bases of knowledge in the graduates.

This **Postgraduate Diploma in Artificial Intelligence and User Experience Design** contains the most complete and up-to-date program on the market. The most important features include:

- The development of case studies presented by experts in Artificial Intelligence and User Experience Design

- 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 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

You will implement advanced analytics strategies to improve the user experience"

You will be prepared to overcome challenges in implementing custom design at scale.

" *Looking to ensure both privacy and transparency in the handling of sensitive data? Achieve your goals with this program in just 150 hours"*

Relearning will allow you to learn with less effort and more performance, getting more involved in your professional specialization.

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

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed to learn in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise 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 university program will provide graduates with the necessary skills to apply Artificial Intelligence tools to their creative projects. In this way, professionals will effectively manage the automatic generation of content, design optimization and pattern recognition. On the other hand, students will use predictive algorithms in order to anticipate user interactions, enabling proactive responses. In addition, their work practice will be characterized by an ethical conscience, which will encourage them to carry out sustainable practices such as waste reduction or the integration of responsible technologies.

*Update your knowledge in Artificial Intelligence and User Experience Design through innovative multimedia content"*

General Objectives

- Understand the theoretical foundations of Artificial Intelligence

- Study the different types of data and understand the data lifecycle

- Evaluate the crucial role of data in the development and implementation of AI solutions

- Delve into algorithms and complexity to solve specific problems

- Explore the theoretical basis of neural networks for *Deep Learning* development

- Analyze bio-inspired computing and its relevance in the development of intelligent systems

- Analyze current strategies of Artificial Intelligence in various fields, identifying opportunities and challenges

- Develop skills to implement artificial intelligence tools in design projects, including automatic content generation, design optimization and pattern recognition

- Apply collaborative tools, taking advantage of Artificial Intelligence to improve communication and efficiency in design teams

- Incorporate emotional aspects into designs through techniques that effectively connect with the audience

- Understand the symbiosis between interactive design and Artificial Intelligence to optimize the user experience

- Develop skills in adaptive design, considering user behavior and applying advanced artificial intelligence tools

- Critically analyze the challenges and opportunities when implementing personalized designs in industry using Artificial Intelligence

- Understand the transformative role of Artificial Intelligence in the innovation of design and manufacturing processes
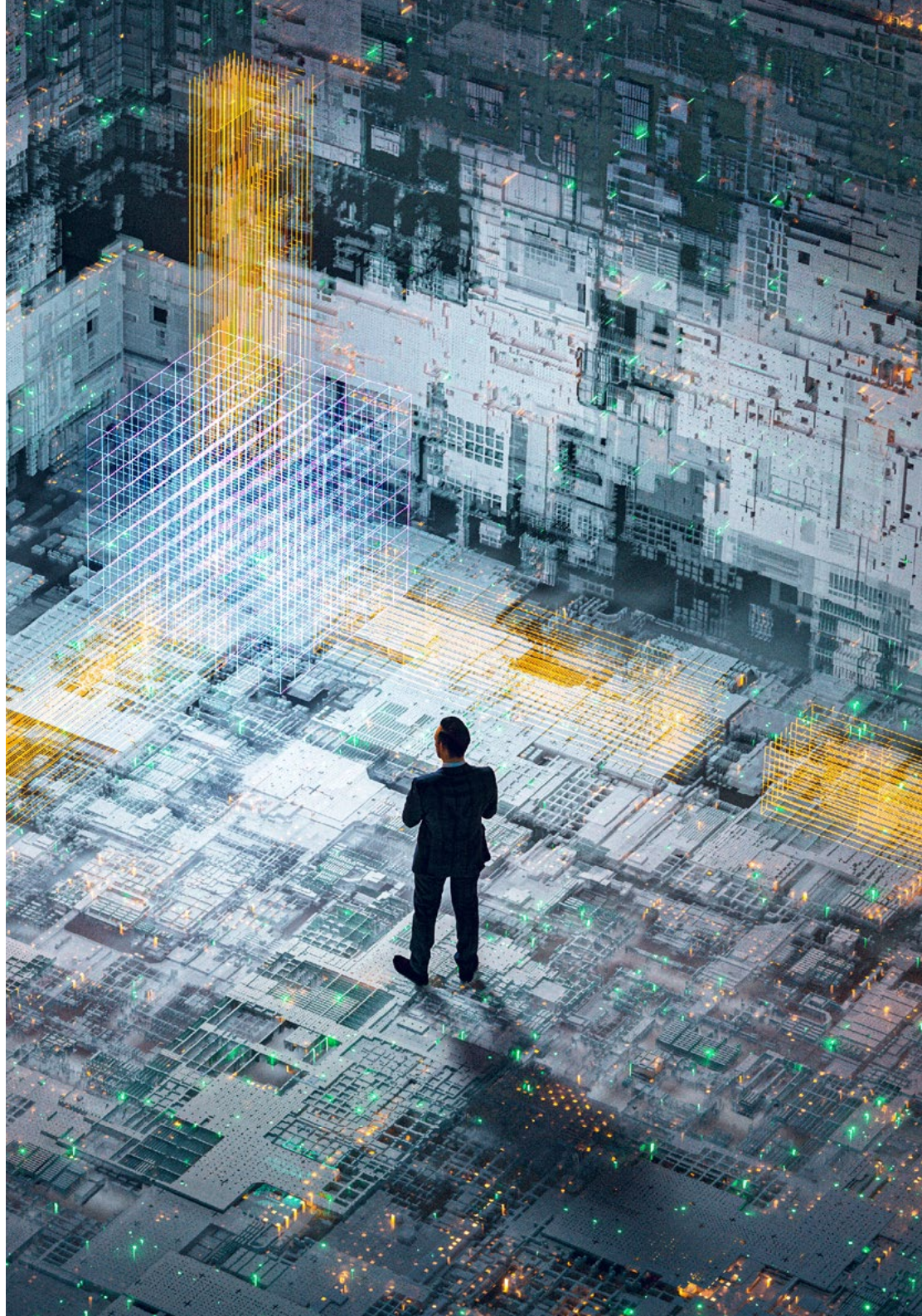
Specific Objectives

Module 1. Practical Applications of Artificial Intelligence in Design

- Apply collaborative tools, leveraging AI to improve communication and efficiency in design teams
- Incorporate emotional aspects into designs through techniques that effectively connect with the audience, exploring how AI can influence the emotional perception of Design
- Master tools and frameworks specific to the application of AI in Design, such as GANs (Generative Adversarial Networks) and other relevant libraries
- Employ AI to generate images, illustrations and other visual elements automatically
- Implementing AI techniques to analyze design-related data, such as navigation behavior and user feedback

Module 2. Design-User Interaction and Artificial Intelligence

- Understand the symbiosis between Interactive Design and AI to optimize the user experience
- Develop skills in Adaptive Design, considering user behavior and applying advanced AI tools
- Critically analyze the challenges and opportunities when implementing personalized designs in industry using IA
- Use predictive AI algorithms to anticipate user interactions, enabling proactive and efficient design responses
- Develop AI-based recommender systems that suggest relevant content, products or actions to users

Module 3. Ethics and Environment in Design and Artificial Intelligence

- Understand the ethical principles related to Design and Artificial Intelligence, cultivating an ethical awareness in decision making
- Focus on the ethical integration of technologies, such as emotion recognition, ensuring immersive experiences that respect the user's privacy and dignity
- Promote social and environmental responsibility in Game Design and in the industry in general, considering ethical aspects in representation and gameplay
- Generate sustainable practices in design processes, ranging from waste reduction to the integration of responsible technologies, contributing to the preservation of the environment
- Analyze how AI technologies can affect society, considering strategies to mitigate their possible negative impacts

You are looking at a flexible program that is compatible with your most demanding daily responsibilities"

03
Course Management

In choosing the management and faculty that make up this exclusive university program, TECH has taken into account the high academic preparation and extensive professional experience of the teachers who have created this comprehensive syllabus. In this way, graduates are guaranteed to receive the most updated knowledge in Artificial Intelligence and User Experience Design. Students have the guarantees they demand to expand their knowledge and will be able to make a quality leap in their profession.

A syllabus made by specialists and a teaching material of the highest level are the key to a successful professional career"

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
- Ph.D. in Psychology from the University of Castilla - La Mancha
- Ph.D. in Economics, Business and Finance from the Camilo José Cela University
- Ph.D. 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

Degree in Electrical Engineering (bilingual) from Carlos III University of Madrid

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

04
Structure and Content

This program will provide students with a comprehensive view of the intersection between Graphic Design and Machine Learning. Consisting of 3 modules, the syllabus will cover everything from automatic generation of visual content to enhanced collaboration. The syllabus will also emphasize the importance of Machine Learning models for predicting user behavior. On the other hand, the academic materials will delve into the environmental impact on industrial design. In this way, graduates will gain an ethical awareness and carry out sustainable pieces to innovate in the artistic sector.
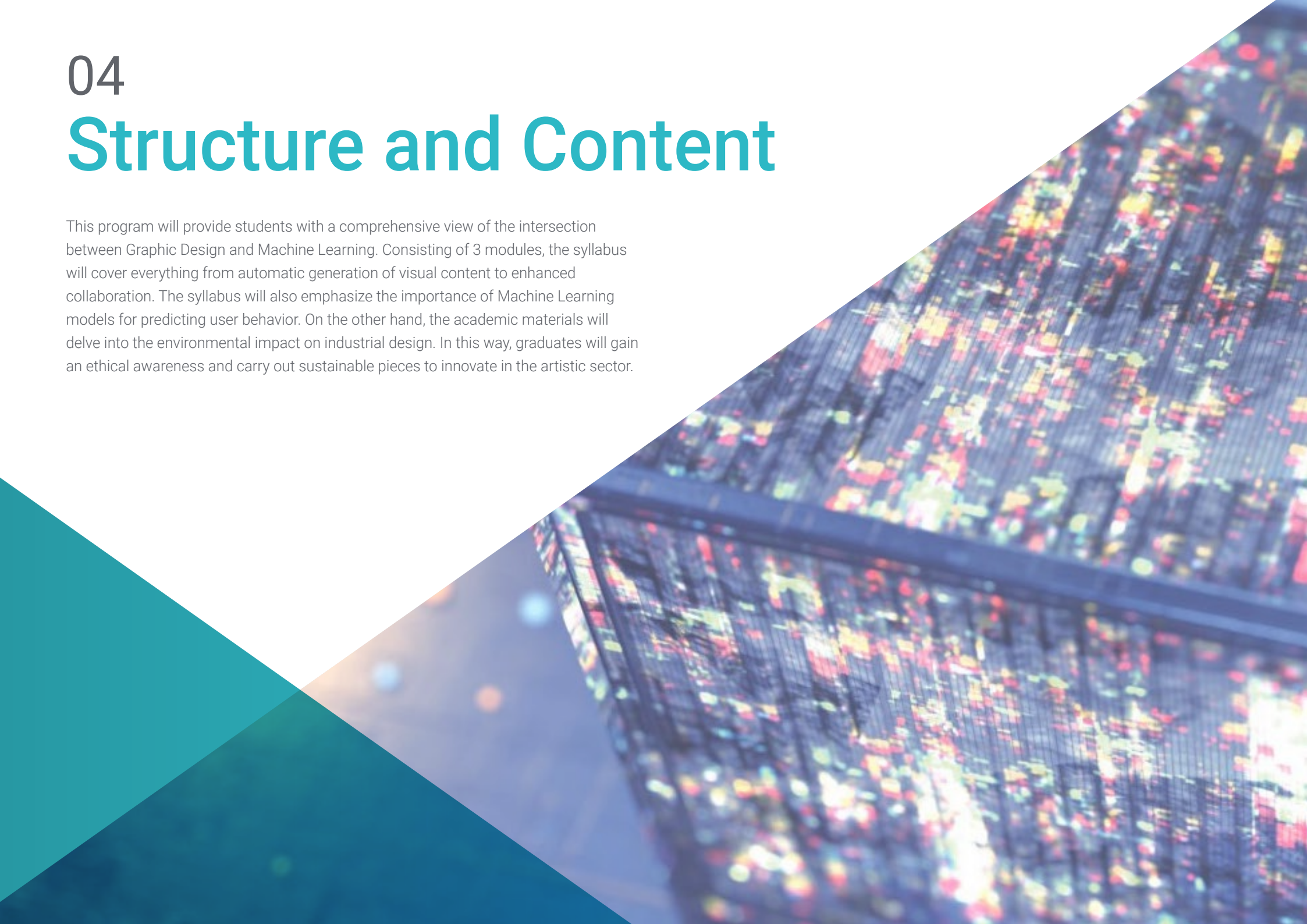
You will master the most advanced tools of Machine Learning and create the most original designs"

Module 1. Practical Applications of Artificial Intelligence in Design

1.1.   Automatic Image Generation in Graphic Design

1.1.1.   Fundamental Concepts of Image Generation

1.1.2.   Tools and *Frameworks* for Automatic Graphic Generation

1.1.3.   Social and Cultural Impact of Generative Design

1.1.4.   Current Trends in the Field and Future Developments and Applications

1.2.   Dynamic Personalization of User Interfaces Using AI

1.2.1.   UI/UX Personalization Principles

1.2.2.   Recommendation Algorithms in UI Customization

1.2.3.   User Experience and Continuous Feedback

1.2.4.   Practical Implementation in Real Applications

1.3.   Generative Design: Applications in Industry and Art

1.3.1.   Fundamentals of Generative Design

1.3.2.   Generative Design in Industry

1.3.3.   Generative Design in Contemporary Art

1.3.4.   Challenges and Future Advances in Generative Design

1.4.   Automatic Creation of Editorial *Layouts* with Algorithms

1.4.1.   Principles of Automatic Editorial *Layout*

1.4.2.   Content Distribution Algorithms

1.4.3.   Optimization of Spaces and Proportions in Editorial Design

1.4.4.   Automation of the Revision and Adjustment Process

1.5.   Procedural Generation of Content in Videogames

1.5.1.   Introduction to Procedural Generation in Videogames

1.5.2.   Algorithms for the Automatic Creation of Levels and Environments

1.5.3.   Procedural Narrative and Branching in Videogames

1.5.4.   Impact of Procedural Generation on the Player Experience

1.6.   Pattern Recognition in Logos with *Machine Learning*

1.6.1.   Fundamentals of Pattern Recognition in Graphic Design

1.6.2.   Implementation of *Machine Learning* Models for Logo Identification

1.6.3.   Practical Applications in Graphic Design

1.6.4.   Legal and Ethical Considerations in Logo Recognition

1.7.   Optimization of Colors and Compositions with AI

    1.7.1.   Color Psychology and Visual Composition

    1.7.2.   Color Optimization Algorithms in Graphic Design

    1.7.3.   Automatic Composition of Visual Elements

    1.7.4.   Evaluation of the Impact of Automatic Optimization on User Perception

1.8.   Predictive Analysis of Visual Trends in Design

    1.8.1.   Data Collection and Current Trends

    1.8.2.   *Machine Learning* Models for Trend Prediction

    1.8.3.   Implementation of Proactive Design Strategies

    1.8.4.   Principles in the Use of Data and Predictions in Design

1.9.   AI-assisted Collaboration in Design Teams

    1.9.1.   Human-IA Collaboration in Design Projects

    1.9.2.   Platforms and Tools for AI-assisted Collaboration

    1.9.3.   Best Practices in AI-assisted Technology Integration

    1.9.4.   Future Perspectives on Human-AI Collaboration in Design

1.10.   Strategies for the Successful Incorporation of AI in Design

    1.10.1.   Identification of AI-solvable Design Needs

    1.10.2.   Evaluation of Available Platforms and Tools

    1.10.3.   Effective Integration in Design Projects

    1.10.4.   Continuous Optimization and Adaptability

Module 2. Design-User Interaction and AI

2.1.   Behavior-Based Design Contextual Suggestions

    2.1.1.   Understanding User Behavior in Design

    2.1.2.   AI-based Contextual Suggestion Systems

    2.1.3.   Strategies to Ensure User Transparency and Consent

    2.1.4.   Trends and Potential Improvements in Behavioral Personalization

2.2.   Predictive Analysis of User Interactions

    2.2.1.   Importance of Predictive Analytics in User-Design Interactions

    2.2.2.   *Machine Learning* Models for Predicting User Behavior

    2.2.3.   Integration of Predictive Analytics in User Interface Design

    2.2.4.   Challenges and Dilemmas in Predictive Analytics

2.3.   Adaptive Design to Different Devices with AI

    2.3.1.   Device Adaptive Design Principles

    2.3.2.   Content Adaptation Algorithms

    2.3.3.   Interface Optimization for Mobile and Desktop Experiences

    2.3.4.   Future Developments in Adaptive Design with Emerging Technologies

2.4.   Automatic Generation of Characters and Enemies in Video Games

    2.4.1.   The need for Automatic Generation in the Development of Videogames

    2.4.2.   Algorithms for Character and Enemy Generation

    2.4.3.   Customization and Adaptability in Automatically Generated Characters

    2.4.4.   Development Experiences: Challenges and Lessons Learned

2.5.   AI Improvement in Game Characters

    2.5.1.   Importance of Artificial Intelligence in Video Game Characters

    2.5.2.   Algorithms to Improve the Behavior of Characters

    2.5.3.   Continuous Adaptation and Learning of AI in Games

    2.5.4.   Technical and Creative Challenges in Character AI Enhancement

2.6.   Custom Design in the Industry: Challenges and Opportunities

    2.6.1.   Transformation of Industrial Design with Customization

    2.6.2.   Enabling Technologies for Customized Design

    2.6.3.   Challenges in Implementing Customized Design at Scale

    2.6.4.   Opportunities for Innovation and Competitive Differentiation

2.7.   Design for Sustainability through AI

    2.7.1.   Life Cycle Analysis and Traceability with Artificial Intelligence

    2.7.2.   Optimization of Recyclable Materials

    2.7.3.   Improvement of Sustainable Processes

    2.7.4.   Development of Practical Strategies and Projects

2.8.   Integration of Virtual Assistants in Design Interfaces

    2.8.1.   Role of Virtual Assistants in Interactive Design

    2.8.2.   Development of Virtual Assistants Specialized in Design

    2.8.3.   Natural Interaction with Virtual Assistants in Design Projects

    2.8.4.   Implementation Challenges and Continuous Improvement

Module 3. Ethics and Environment in Design and AI

Don't miss the opportunity to boost your career through this innovative 6-month program"

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 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.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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:
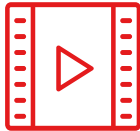
Study Material

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 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.

30%

10%

8%

20%

25%

4%

3%
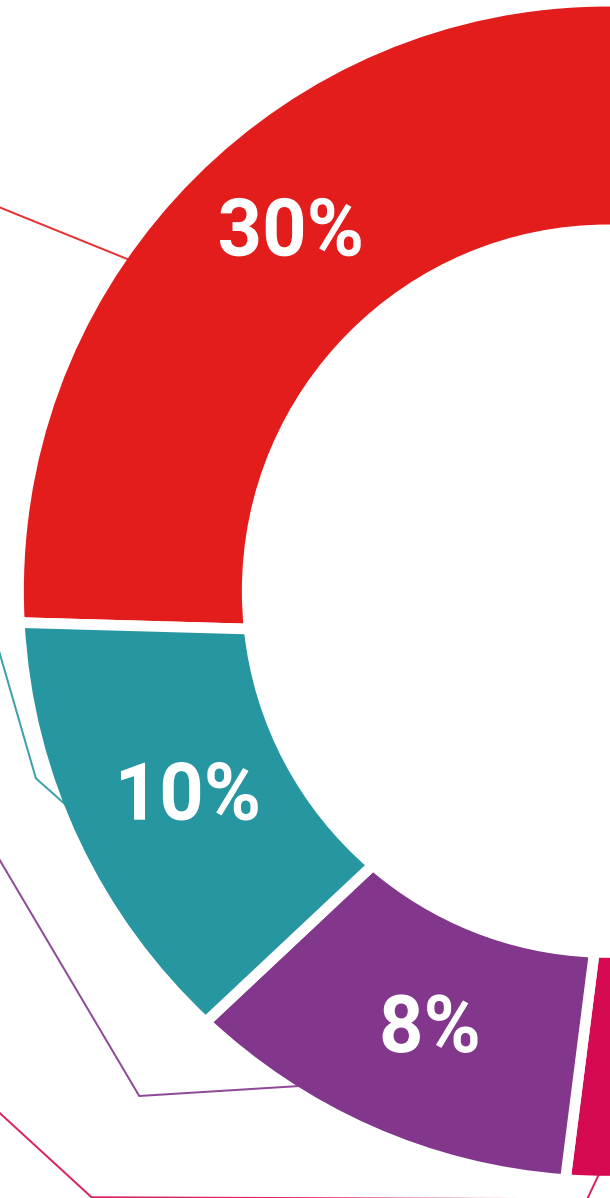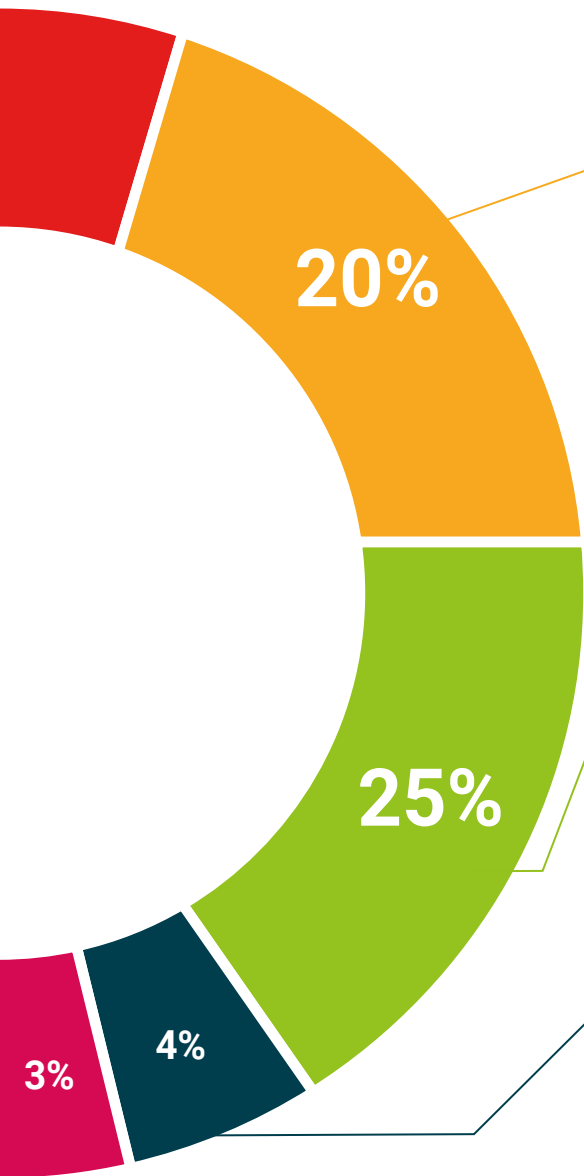
Case Studies

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 Artificial Intelligence and User Experience Design guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.

Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork"
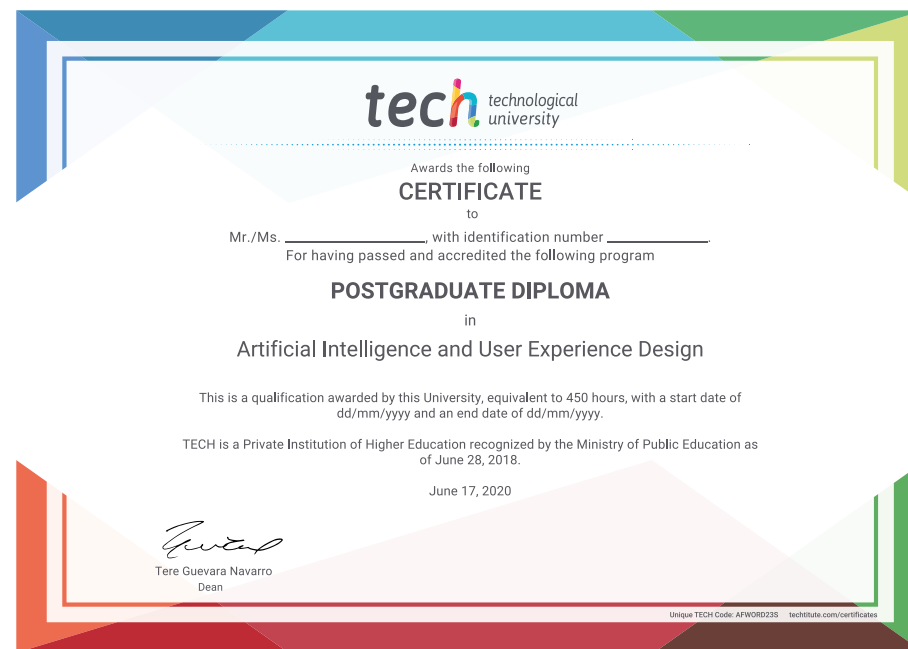
This **Postgraduate Diploma in Artificial Intelligence and User Experience Design** contains the most complete and up-to-date educational program on the market.

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 Artificial Intelligence and User Experience Design**

Official Nº of hours: **450 h.**

tech technological university

Awards the following
CERTIFICATE
to
Mr./Ms. _____, with identification number _____.
For having passed and accredited the following program

POSTGRADUATE DIPLOMA
in
Artificial Intelligence and User Experience Design

This is a qualification awarded by this University, equivalent to 450 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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