HybridProfessional Master's Degree

MBA in Digital Transformation and Industry 4.0

tech global university

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MBA in Digital Transformation and Industry 4.0

Modality: **Hybrid (Online + Internship)**
Duration: **12 months.**
Certificate: **TECH Global University**
Credits **60 + 4 ECTS**
Website:**www.techtitute.com/us/articial-intelligence/hybrid-professional-master-degree/hybrid-professional-master-degree-mba-transformacion-digital-industria-4-0**

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01

Introduction

A survey conducted by the Spanish Confederation of Business Organizations reveals that 58% of entrepreneurs place Digital Transformation among their strategic priorities. In this context, this transition is a fundamental requirement for institutions to ensure their competitiveness and sustainability in terms of business. The emerging technologies of Industry 4.0 make production processes more efficient and profitable. For this reason, more and more companies are demanding the incorporation of professionals in this technological field. In response to this requirement, TECH launches a university degree that will provide the latest innovations in highly demanded fields such as Artificial Intelligence.

Thanks to this Hybrid Professional Master's Degree MBA, you will master Data Ingestion technologies for your company to make the most informed decisions and develop innovative processes"

Digital Transformation and Industry 4.0 allows experts to acquire competitive advantages to ensure their professional performance for the future. In this context, by effectively handling enabling technologies (such as the Internet of Things or Deep Learning), specialists become an important asset for companies. This is because they are qualified to carry out their digital transition and thus adapt to today's needs. These tools also offer other advantages, such as process automation. In this way, they serve to increase operational efficiency, reduce production times and optimize organizational resources. However, as these are emerging tools, professionals require constant updating to stay at the technological forefront.

For this reason, TECH creates a revolutionary Hybrid Professional Master's Degree MBA in Digital Transformation and Industry 4.0. Through this curriculum, students will nurture their professional practice with the most innovative techniques and tools of Artificial Intelligence. To achieve this, the syllabus will delve into issues such as Neural Networks, Natural Language Processing or the architectures behind a Smart Factory.

It should be noted that the program is based on a disruptive educational modality, composed of 2 stages. The first is taught 100% online, so that students can study the concepts and working techniques. To facilitate the learning process, the educational cycle is supported by the Relearning methodology, which will offer students the assimilation of content in a faster and more flexible way.

On the other hand, after this, the graduates will carry out a practical stay in a prestigious company dedicated to technology to apply all the knowledge acquired. With a duration of 3 weeks, students will work alongside leading experts in Digital Transformation processes. In addition, they will have the support of an assistant tutor who will be in charge of including dynamic tasks in the program to formalize their academic update.

This **Hybrid Professional Master's Degree in MBA in Digital Transformation and Industry 4.0** contains the most complete and up-to-date program on the market. The most important features include:

- Development of more than 100 case studies presented by Digital Transformation and Industry 4.0 professionals
- Its graphic, schematic and eminently practical contents, with which they are conceived, gather essential information on those technological disciplines essential for professional practice
- Practice guides to properly build immersive virtual environments
- Reports on the current market situation and growth by different industries
- Innovative strategies for the implementation of an API to interact with platforms
- All of this will be complemented by 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
- Furthermore, you will be able to carry out an internship in one of the best companies

TECH offers you the revolutionary Relearning methodology, with which you will achieve a much more effective and situated learning"

An intensive university degree that will lay the foundations for your professional progress and will place you at the pinnacle of Industry 4.0"

Take an intensive 3-week internship at a prestigious technology company and acquire all the knowledge you need to grow professionally.

The interactive summaries of each topic will allow you to consolidate the concepts of Lean Manufacturing in a more dynamic way.

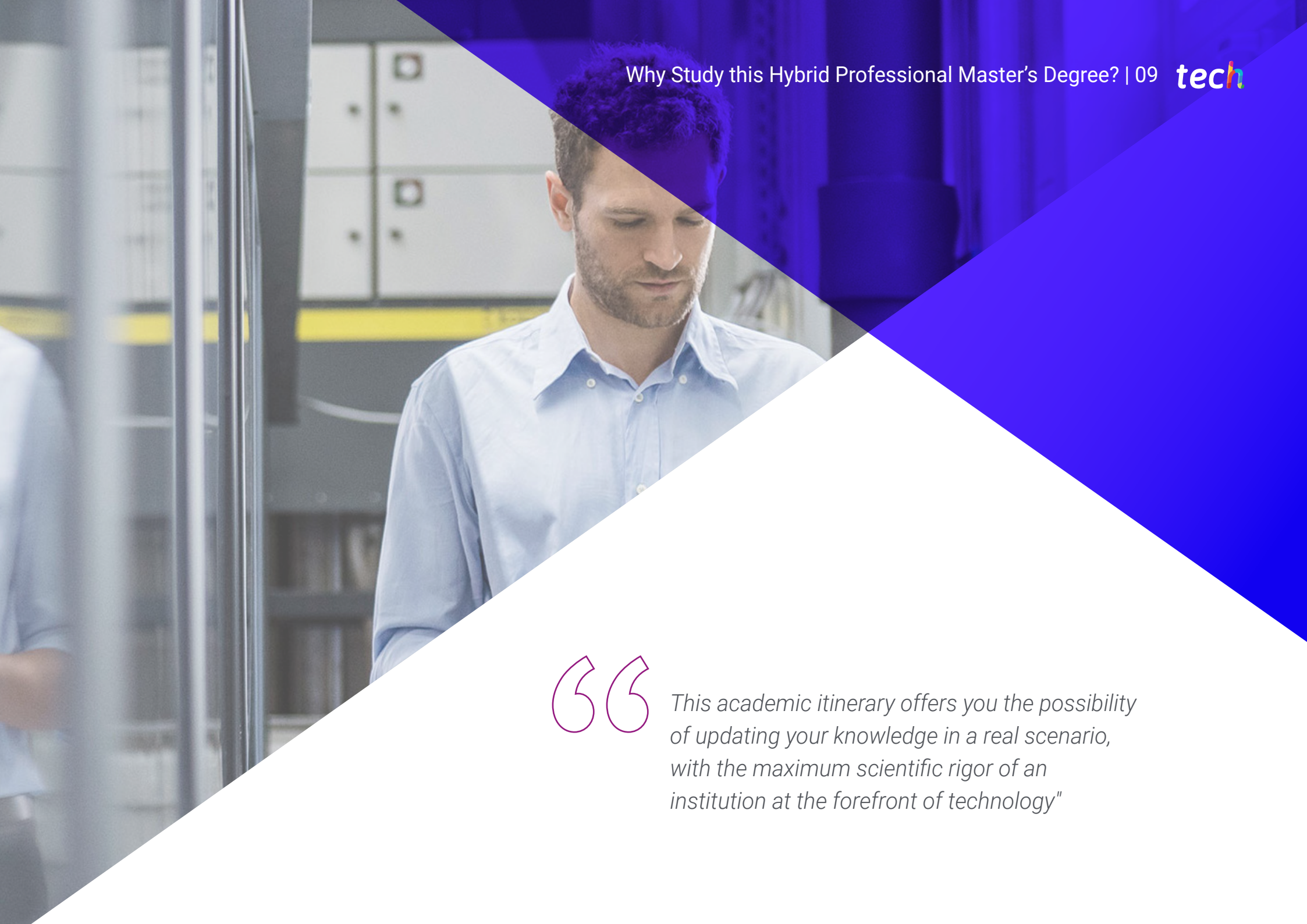
In this Professional Master's Degree proposal, of a professionalizing nature and blended mode, the program is aimed at updating professionals who develop Digital Transformation tasks in companies. The contents are based on the latest scientific evidence, and oriented in a didactic way to integrate theoretical knowledge in the practical reality of the labor market.

Thanks to its multimedia content elaborated with the latest educational technology, they will allow the Digital Transformation and Industry 4.0 professional a situated and contextual learning, that is, a simulated environment that will provide immersive learning programmed to specialize in real situations. The design of this program is based on Problem-Based Learning, by means of which they will have to try to solve the different situations of professional practice that will be presented to them throughout the program. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

02

Why Study this Hybrid Professional Master's Degree?

In the field of Digital Transformation and Industry 4.0, it is essential for professionals to have the most up-to-date knowledge and skills to overcome the current challenges in the sector. In view of the changes occurring in this branch due to the emergence of new technologies, it is necessary for experts to be updated in a real working environment. Precisely, TECH offers students the opportunity to do so through this program, which combines the most updated and complete theoretical contents with a practical stay in a prestigious technology company. In this way, graduates will enjoy an update on subjects such as Deep Learning, Big Data or Quantum Computing.



This academic itinerary offers you the possibility of updating your knowledge in a real scenario, with the maximum scientific rigor of an institution at the forefront of technology"

1. Updating from the latest technology available

TECH stands out in the academic market for using the most innovative and sophisticated technologies for its university degrees. Therefore, for this Hybrid Professional Master's Degree MBA, it will have the most innovative teaching resources. In addition, after the theoretical phase of the program, students will embark on an Internship Program in a renowned technology company. In this way, they will develop their professional activity in facilities of the highest level, equipped with the most modern technological tools to lead the Digital Transformation.

2. Gaining in-depth knowledge from the experience of top specialists

Throughout the academic itinerary, students will be supported by a team of experts in Artificial Intelligence and Industry 4.0. These professionals will provide graduates with all the resources they need to get the most out of the Hybrid Professional Master's Degree MBA.

3. Entering first-class professional environments

Enrollment in this Hybrid Professional Master's Degree MBA will allow graduates to work actively in institutional Digital Transformation processes. This will enable students to put all their skills to work, as well as to apply everything they have learned during the theoretical period to a real work scenario.

4. Combining the best theory with state-of-the-art practice

Aware of the importance of offering a comprehensive education, TECH goes far beyond the theoretical level, which is so common in other study programs. To this end, it combines this approach with practice, to ensure that graduates get closer to the reality of their work. In this sense, the academic itinerary includes an Internship Program in a prestigious technology company, so that students can develop their full potential and professional development.

5. Expanding the boundaries of knowledge

TECH offers graduates the opportunity to carry out this Internship Program not only in centers of national importance, but also internationally. In this way, the student will be able to expand its borders and catch up with the best professionals, who work in first class digital companies.

You will have full practical immersion at the center of your choice"

03

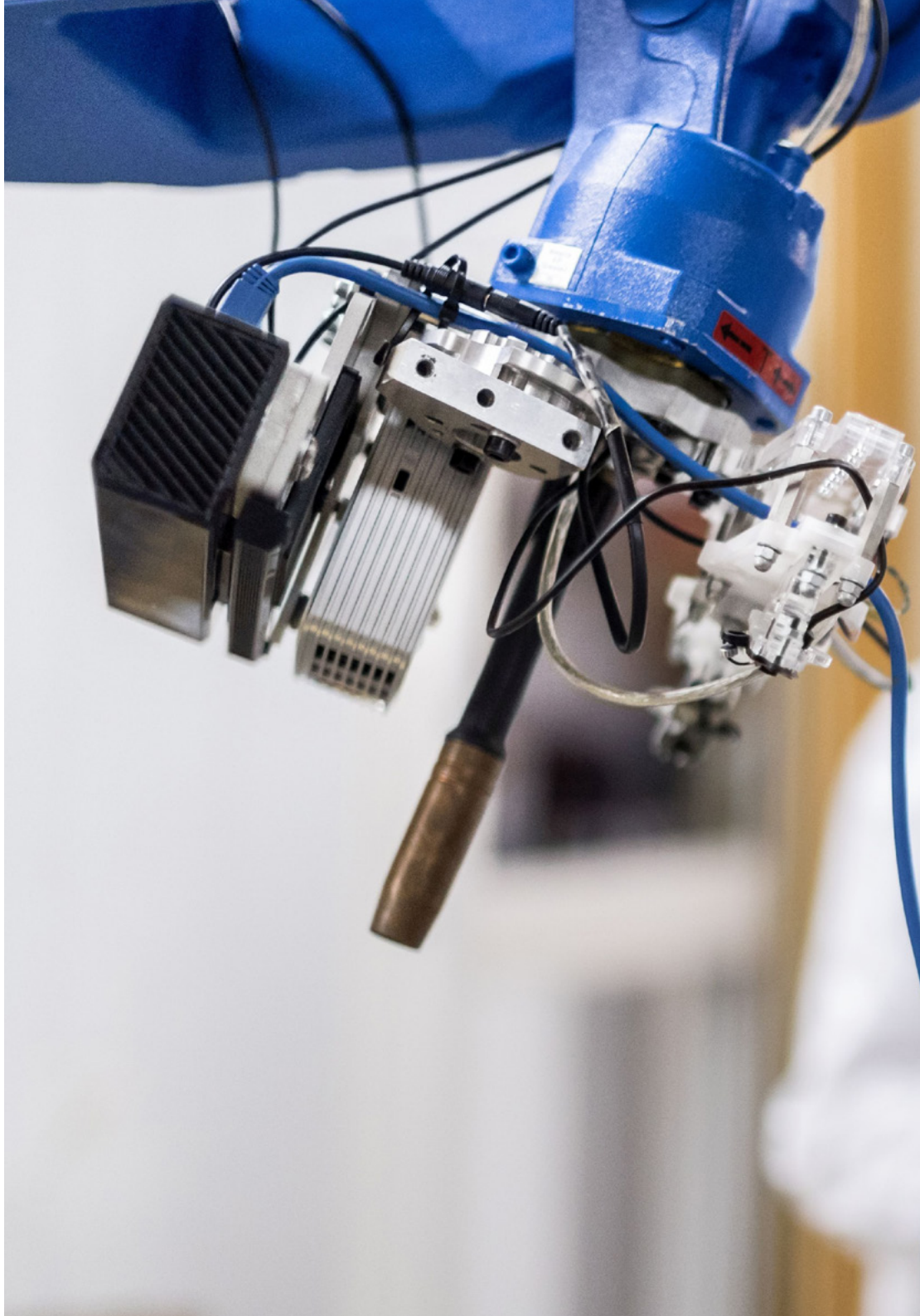
Objectives

Designed by experts in Digital Transformation, this program will provide students with a holistic and global vision of Industry 4.0. In turn, this Hybrid Professional Master's Degree MBA will train students in the correct handling of advanced digital tools and technologies such as Artificial Intelligence, the Internet of Things or Big Data, among others. Therefore, graduates will be qualified to drive innovation and efficiency in organizations.

TECH presents you with a unique university degree that will help you, in just 12 months, to make a leap in your profession"

General Objective

- The overall objective of this Hybrid Professional Master's Degree MBA in Digital and Industrial Transformation 4.0 is for graduates to conduct a comprehensive analysis of the impact of emerging technologies in the process of global digitization. In this sense, the program will provide students with the most cutting-edge tools of Artificial Intelligence to lead the technological leap in organizations and overcome the challenges that arise during their various professional duties. Likewise, students will be equipped with the most advanced resources to develop projects that stand out for their innovation and creativity



Specific Objectives

Module 1. Blockchain and Quantum Computing

- Acquire in-depth knowledge of the fundamentals of Blockchain technology and its value propositions
- Lead the creation of Blockchain-based projects and apply this technology to different business models and the use of tools such as Smart Contracts

Module 2. Big Data and Artificial Intelligence

- Delve into the knowledge of the fundamental principles of artificial intelligence
- Master the techniques and tools of this technology (machine learning/deep learning)
- Obtain a practical knowledge of one of the most widespread applications such as Chatbots and virtual assistants
- Acquire knowledge of the different transversal applications that this technology has in all fields

Module 3. Virtual, Augmented and Mixed Reality

- Acquire an expert knowledge of the characteristics and fundamentals of Virtual Reality, Augmented Reality and Mixed Reality
- Delve into the existing differences between each of these fields
- Use applications of each of these technologies and develop solutions with each of them individually and in an integrated manner
- Efficiently combining all these technologies to achieve immersive experiences

Module 4. Industry 4.0

- In-depth study of the key principles of Industry 4.0, the technologies on which they are based and the potential of all of them in their application to the different productive sectors
- Convert any manufacturing facility into a Smart Factory and be prepared for the challenges and challenges that come with it

Module 5. Leading Industry 4.0

- Understand the current virtual era and its leadership capacity, on which the success and survival of digital transformation processes involving any type of industry will depend
- Develop, from all available data, the Digital Twin of the facilities/systems/assets integrated in an IoT network

Module 6. Robotics, Drones and Augmented Workers

- Better understanding of the main automation and control systems, their connectivity, the types of industrial communications and the type of data they exchange
- Convert the production process facilities into a true Smart Factory
- Be able to deal with large amounts of data, define their analysis and derive value from them
- Define continuous monitoring, predictive and prescriptive maintenance models

Module 7. Industry 4.0 Automation Systems

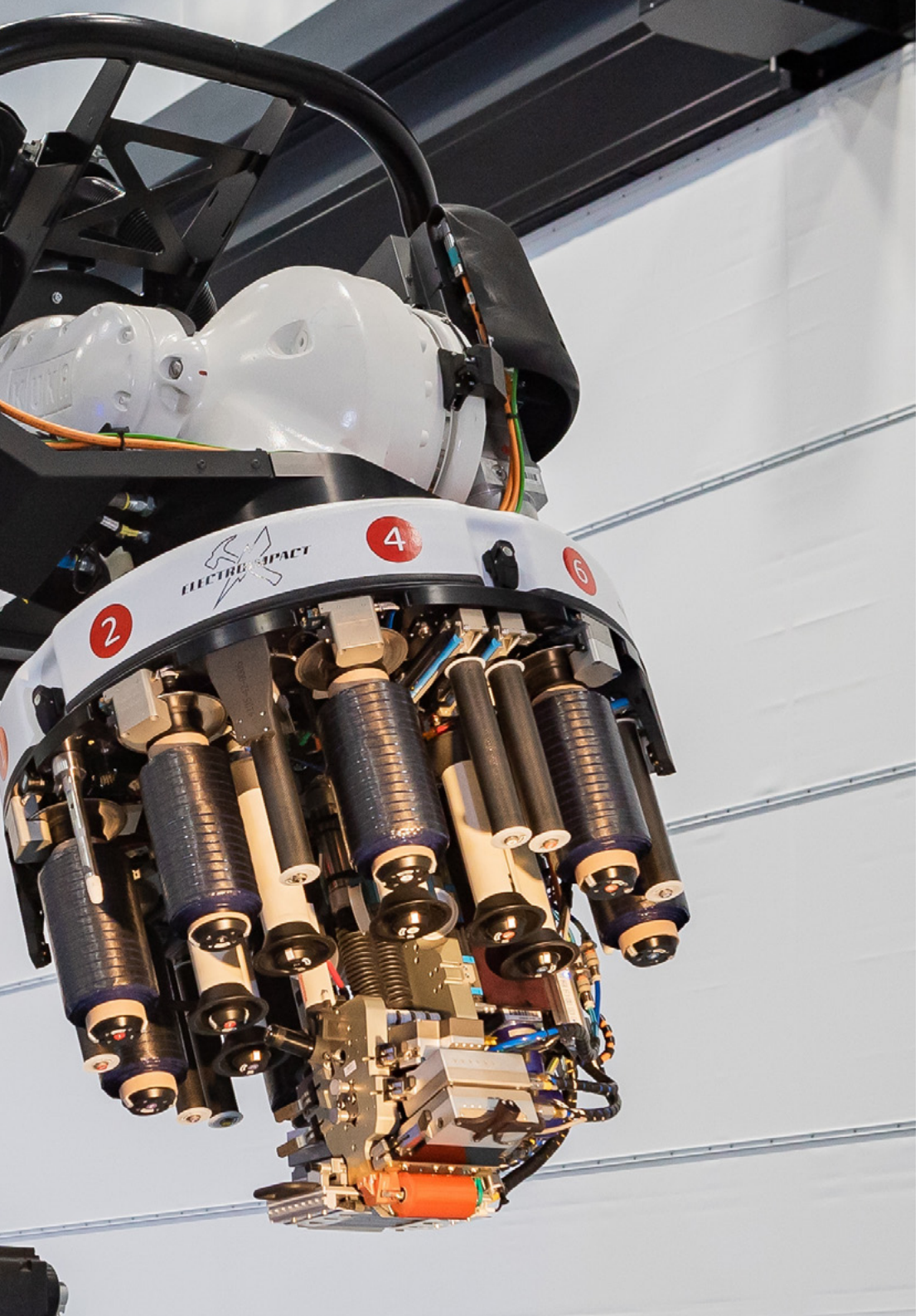
- Conduct an exhaustive analysis of the practical application that emerging technologies are having in the different economic sectors and in the value chain of their main industries
- In-depth knowledge of the primary and secondary economic sectors, as well as the technological impact they are experiencing

Module 8. Industry 4.0- Services and Solutions I

- Entering the world of robotics and automation
- Delve into the applications of artificial intelligence to robotics oriented to predict behaviors and optimize processes
- Study robotics concepts and tools, as well as use cases, real examples and integration with other systems and demonstration
- Analyze the most intelligent robots that will accompany us in the coming years and how humanoid machines will be specialized to perform in complex and challenging environments

Module 9. Industry 4.0 Services and Solutions II

- Possess a thorough understanding of the technological impact and how technologies are revolutionizing the tertiary economic sector in the fields of transportation and logistics, healthcare (E-Health and Smart Hospitals), smart cities, the financial sector (Fintech) and mobility solutions.
- Know the technological trends of the future



Module 10. Internet of Things (IoT)

- Have detailed knowledge of the functioning of IoT and Industry 4.0 and its combinations with other technologies, its current situation, its main devices and uses and how hyperconnectivity gives rise to new business models where all products and systems are connected and in permanent communication
- Deepen the knowledge of an IoT platform and the elements that compose it, the challenges and opportunities to implement IoT platforms in factories and companies, the main business areas related to IoT platforms and the relationship between IoT platforms, robotics and other emerging technologies

The Hybrid Professional Master's Degree MBA will include the analysis of real cases that will help you to extract valuable lessons to carry out your projects with maximum efficiency"

04

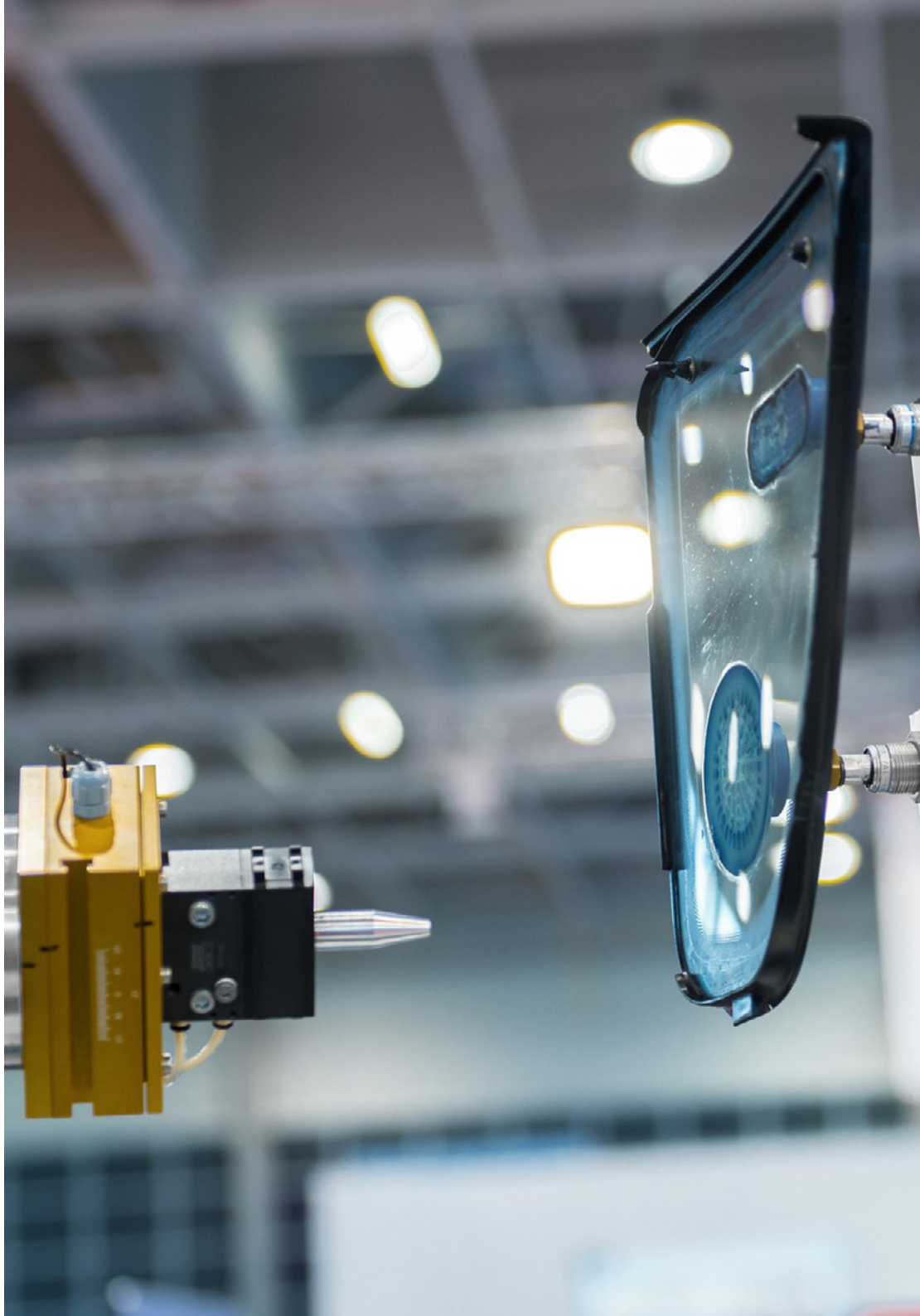
Skills

Through this university degree, graduates will expand their skills in the management of the enabling technologies of the Fourth Industrial Revolution (including Artificial Intelligence, Mixed Reality and the Internet of Things). This will allow students to lead the Digital Transformation processes in any company, which will improve their employability by taking advantage of the wide range of opportunities offered by the technology industry.

This Hybrid Professional Master's Degree MBA will help you to enhance your skills to lead the business Digital Transformation through the most revolutionary tools of Artificial Intelligence"

General Skills

- Develop an Industry 4.0 oriented strategy
- Have a thorough knowledge of the fundamental elements to successfully carry out a digital transformation process adapted to the new market rules
- Develop an advanced knowledge of the new emerging and exponential technologies that are affecting the vast majority of industrial and business processes in the market
- Adapt to the current market situation governed by automation, robotization and IoT platforms



Specific Skills

- Secure an existing IoT ecosystem or creating a secure one by deploying intelligent security systems
- Automate production systems with the integration of robots and industrial robotics systems
- Maximize value creation for the customer by applying Lean Manufacturing to the digitalization of our production process
- Know how the Blockchain works and the characteristics of the so-called networks
- Use the main techniques of artificial intelligence such as Machine Learning and Deep Learning, Neural Networks, and the applicability and use of Natural Language Recognition
- Face the great challenges related to artificial intelligence, such as providing it with emotions, creativity and personality, even considering how ethical and moral connotations may be affected in its use
- Create virtual worlds and elevate User Experience (UX) enhancement
- Integrate the benefits and main advantages of Industry 4.0
- Lead the new business models derived from Industry 4.0
- Develop future production models
- Face the challenges of Industry 4.0 and understanding its effects
- Master the essential technologies of Industry 4.0
- Lead manufacturing digitization processes and identify and define digital capabilities in an organization
- Define the architecture behind a Smart Factory
- Reflecting on technological markers in the post-covid era and in the era of absolute virtualization
- Learn more about the current situation in the digital transformation
- Use RPA (Robotic Process Automation) to automate processes in companies, gain efficiency and reduce costs
- Know the business strategies derived from Industry 4.0, its value chain and the factors of digitalization of its processes

A university program designed for you to optimally integrate blockchain technology into your projects and improve efficiency in industrial processes"

05

Course Management

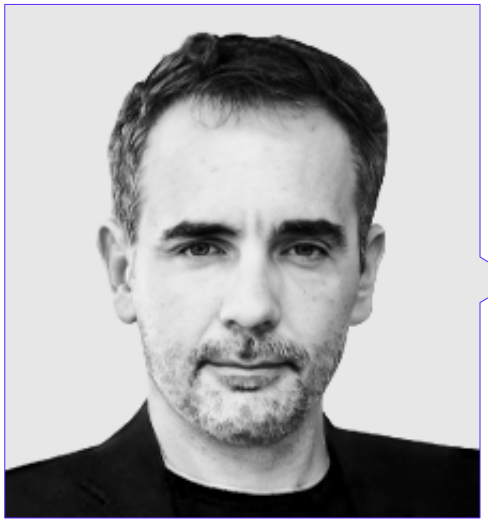
For the design and delivery of this Hybrid Professional Master's Degree MBA, TECH brings together a first-class teaching staff. Specialized in Digital Transformation and Artificial Intelligence, these professionals will transmit to students their solid understanding of Industry 4.0, also helping them to obtain new skills to optimize their daily practice. In this way, graduates will have an enriching learning experience that will enable them to successfully meet their career goals.

The teachers in this program will provide you with the most innovative tools to create fully immersive user experiences”

Management

Dr. Segovia Escobar, Pablo

- Chief Executive of the Defense Sector in the Company Tecnobit of the Oesía Group.
- Corporate Project Director Indra
- Master's Degree in Companies Administration and Management by the National University of Distance Education.
- Postgraduate in Strategic Management Function
- Member of: Spanish Association of People with High Intellectual Quotient



Dr. Diezma López, Pedro

- Chief Innovation Officer and CEO of Zerintia Technologies
- Founder of the technology company Acuilae.
- Member of the Kebala Group for business incubation and promotion.
- Consultant for technology companies such as Endesa, Airbus or Telefónica.
- Wearable "Best Initiative" Award in eHealth 2017 and "Best Technological "Solution" 2018 for occupational safety

Professors

Ms. Sánchez López, Cristina

- CEO and founder of Acuilae
- Artificial Intelligence consultant at ANHELA IT
- Creator of Ethyka Software for Computer System Security
- (Software Engineer) for the Accenture Group in large clients such as Bank of Santander, BBVA, Endesa or Barclays Bank.
- Master's Degree in Data Science at KSchool
- Degree in Statistics from the Complutense University Madrid

Mr. Montes, Armando

- EMERTECH collaborator developing technology products such as Smart Vest
- Expert in drones, robots, electronics and 3D printers
- Ordering and Customer Fulfillment Specialist for GE Renewable Energy
- CEO of the School of Superheroes Foundation related to 3D Printing and Smart Robot Implementation and the Implementation of Smart Robots

Mr. Castellano Nieto, Francisco

- Head of Indra Company Maintenance Area
- Consultant for Siemens AG, Allen-Bradley at Rockwell Automation and other companies
- Industrial Electronic Technical Engineer by the Universidad Pontificia Comillas

Mr. Asenjo Sanz, Álvaro

- IT Consultant for Capitole Consulting
- Project Manager for Kolokium Blockchain Technologies
- IT Engineer for Aubay, Tecnocom, Humantech, Ibermatica and Acens Technologies
- Degree from Computer Engineering of Systems at the Complutense University of Madrid.

Mr. González Cano, José Luis

- Lighting Designer for different projects as a freelance expert
- Vocational training teacher in electronic systems, telematics (CISCO certified instructor), radio communications, IoT.
- Degree in Optics and Optometry from the Complutense University of Madrid
- Industrial Electronics Technician by Netecad Academy
- Member of: The Professional Association of Lighting Designers (Technical Consultant) and Member of the Spanish Lighting Committee.

You will be able to consult all your doubts directly with the teaching team, deriving in a personalized tutoring adapted to your own demands"

06

Structure and Content

This Hybrid Professional Master's Degree MBA is designed by a multidisciplinary teaching team, which has put all its efforts in pouring into the teaching materials its deep knowledge and years of professional experience in the field of Digital Transformation and Industry 4.0. Therefore, TECH provides students with a Virtual Campus full of high quality multimedia teaching resources, available 24 hours a day. In addition, graduates will culminate their academic journey with a practical stay in a prestigious technology company, where they will deploy their technical and analytical skills in Deep Learning.

You will have at your disposal the most modern educational resources, with free access to the Virtual Campus 24 hours a day. Enroll now!"

Module 1. Blockchain and Quantum Computing

1.1. Aspects of Decentralization
- 1.1.1. Market Size, Growth, Companies and Ecosystem
- 1.1.2. Fundamentals of Blockchain

1.2. Background: Bitcoin, Ethereum, etc.
- 1.2.1. Popularity of Decentralized Systems
- 1.2.2. Evolution of Decentralized Systems

1.3. Blockchain Operation and Examples
- 1.3.1. Types of Blockchain and Protocols
- 1.3.2. Wallets, Mining and More

1.4. Characteristics of Blockchain Networks
- 1.4.1. Functions and Properties of Blockchain Networks
- 1.4.2. Applications: Cryptocurrencies, Reliability, Chain of Custody, etc

1.5. Types of Blockchain
- 1.5.1. Public and Private Blockchains
- 1.5.2. *Hard And Soft Forks*

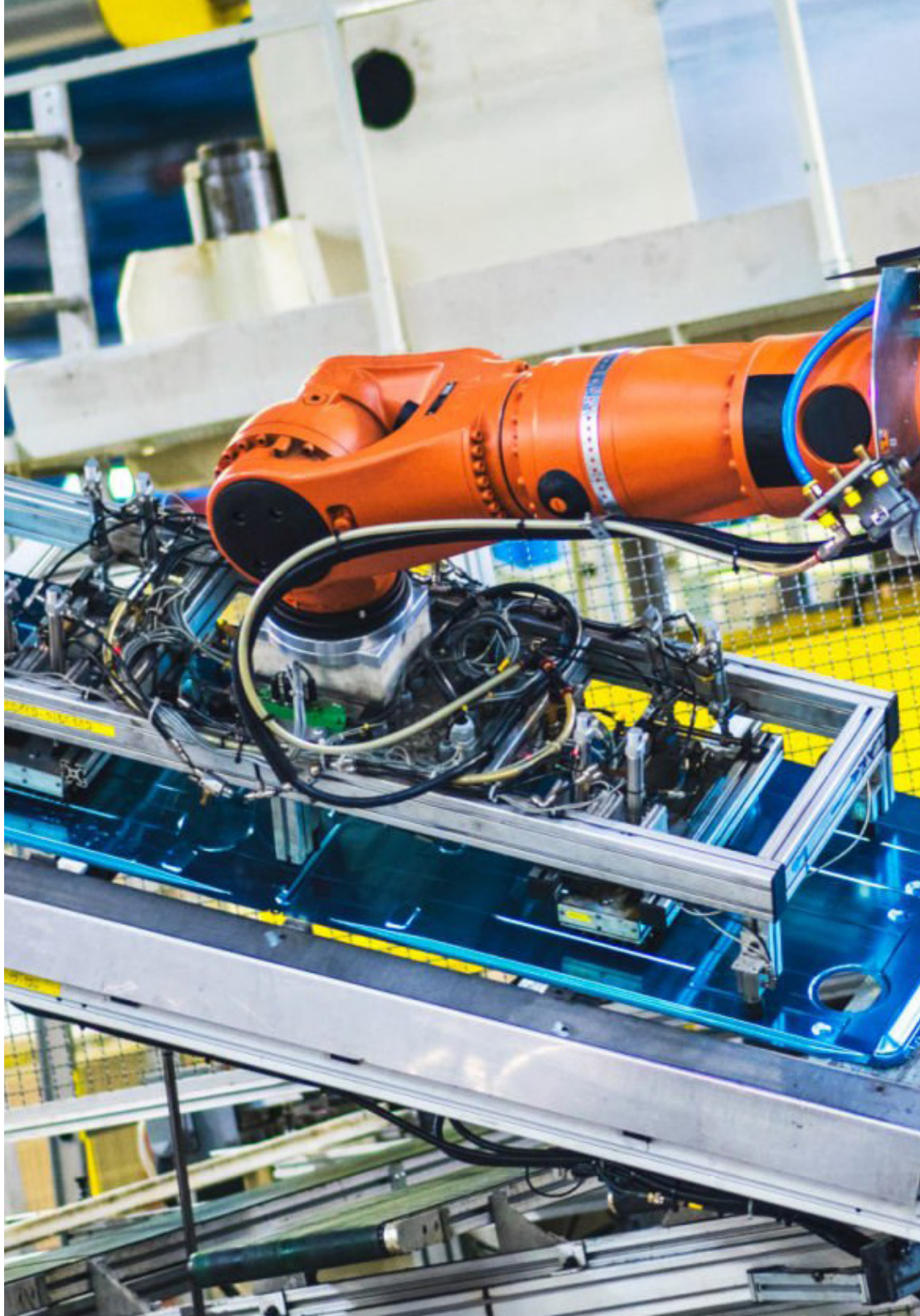
1.6. *Smart Contracts*
- 1.6.1. Intelligent Contracts and Their Potential
- 1.6.2. Smart Contract Applications

1.7. Industry Use Models
- 1.7.1. Blockchain Applications by Industry
- 1.7.2. Blockchain Success Stories by Industry

1.8. Security and Cryptography
- 1.8.1. Objectives of Cryptography
- 1.8.2. Digital Signatures and Hash Functions

1.9. Cryptocurrencies and Uses
- 1.9.1. Types of Cryptocurrencies Bitcoin, Hyperledger, Ethereum, Litecoin, etc.
- 1.9.2. Current and Future Impact of Cryptocurrencies
- 1.9.3. Risks and Regulations

1.10. Quantum Computing
- 1.10.1. Definition and Keys
- 1.10.2. Uses of Quantum Computing



Module 2. Big Data and Artificial Intelligence

2.1. Fundamental Principles of Big Data
- 2.1.1. Big Data
- 2.1.2. Tools to Work With Big Data

2.2. Data Mining and Warehousing
- 2.2.1. Data Mining Cleaning and Standardization
- 2.2.2. Information Extraction, Machine Translation, Sentiment Analysis, etc
- 2.2.3. Types of Data Storage

2.3. Data Intake Applications
- 2.3.1. Principles of Data intake
- 2.3.2. Data Ingestion Technologies to Serve Business Needs

2.4. Data Visualization
- 2.4.1. The Importance of Data Visualization
- 2.4.2. Tools to Carry It Out Tableau, D3, matplotlib (Python), Shiny®

2.5. Machine Learning
- 2.5.1. Understanding Machine Learning
- 2.5.2. Supervised and Unsupervised Learning
- 2.5.3. Types of Algorithms

2.6. Neural Networks (Deep Learning)
- 2.6.1. Neural Network: Parts and Operation
- 2.6.2. Types of Networks CNN, RNN
- 2.6.3. Applications of Neural Networks; Image Recognition and Natural Language Interpretation
- 2.6.4. Generative Text Networks: LSTM

2.7. Natural Language Recognition
- 2.7.1. PLN (Processing Natural Language)
- 2.7.2. Advanced PLN Techniques: Word2vec, Doc2vec

2.8. Chatbots and Virtual Assistants
- 2.8.1. Types of Assistants: Voice and Text Assistants
- 2.8.2. Fundamental Parts for the Development of an Assistant: Intents, Entities and Dialog Flow
- 2.8.3. Integrations: Web, Slack, WhatsApp, Facebook
- 2.8.4. Assistant Development Tools: Dialogflow, Watson Assistant

2.9. Emotions, Creativity and Personality in IA
- 2.9.1. Understand How to Detect Emotions Using Algorithms
- 2.9.2. Creating a Personality: Language, Expressions and Content

2.10. Future of Artificial Intelligence

2.11. Reflections

Module 3. Virtual, Augmented and Mixed Reality

3.1. Market and Tendencies
- 3.1.1. Current Market Situation
- 3.1.2. Reports and Growth by Different Industries

3.2. Differences Between Virtual, Augmented and Mixed Reality
- 3.2.1. Differences Between Immersive Realities
- 3.2.2. Immersive Reality Typology

3.3. Virtual Reality Cases and Uses
- 3.3.1. Origin and Fundamentals of Virtual Reality
- 3.3.2. Cases Applied to Different Sectors and Industries

3.4. Augmented Reality Cases and Uses
- 3.4.1. Origin and Fundamentals of Augmented Reality
- 3.4.2. Cases Applied to Different Sectors and Industries

3.5. Mixed and Holographic Reality
- 3.5.1. Origin, History and Fundamentals of Mixed and Holographic Reality
- 3.5.2. Cases Applied to Different Sectors and Industries

3.6. 360º Photography and Video
- 3.6.1. Camera Typology
- 3.6.2. Uses of 360 Images
- 3.6.3. Creating a Virtual Space in 360 Degrees

3.7. Virtual World Creation
- 3.7.1. Platforms for the Creation of Virtual Environments
- 3.7.2. Strategies for the Creation of Virtual Environments

3.8. User Experience (UX)
- 3.8.1. Components in the User Experience
- 3.8.2. Tools for the Creation of User Experiences

3.9. Devices and Glasses for Immersive Technologies
- 3.9.1. Device Typology on the Market
- 3.9.2. Glasses and Wearables: Operation, Models and Uses
- 3.9.3. Smart Glasses Applications and Evolution

3.10. Future Immersive Technologies
- 3.10.1. Tendencies and Evolution
- 3.10.2. Challenges and Opportunities

Module 4. Industry 4.0

4.1. Definition of 4.0 Industry
- 4.1.1. Features

4.2. Benefits of the 4.0 Industry
- 4.2.1. Key Factors
- 4.2.2. Main Advantages

4.3. Industrial Revolutions and Vision of the Future
- 4.3.1. Industrial Revolutions
- 4.3.2. Keys Factors in Each Revolution
- 4.3.3. Technological Principles as a Basis for Possible New Revolutions

4.4. The Digital Transformation of the Industry
- 4.4.1. Characteristics of the Digitization of the Industry
- 4.4.2. Disruptive Technologies
- 4.4.3. Applications in the Industry

4.5. Forth Industrial Revolution. Key Principles of Industry 4.0
- 4.5.1. Definitions
- 4.5.2. Key Principles and Applications

4.6. 4.0 Industry and Industrial Internet
- 4.6.1. Origin of IoT
- 4.6.2. Operation
- 4.6.3. Steps to Follow for its Implementation
- 4.6.4. Benefits

4.7. Smart Factory Principles
- 4.7.1. The Smart Factory
- 4.7.2. Elements that Define a Smart Factory
- 4.7.3. Steps to Deploy a Smart Factory

4.8. Status of the 4.0 Industry
- 4.8.1. Status of the 4.0 Industry in Different Sectors
- 4.8.2. Barriers to the Implementation of 4.0 Industry

4.9. Challenges and Risks
- 4.9.1. DAFO Analysis
- 4.9.2. Challenges

4.10. Role of Technological Capabilities and the Human Factor
- 4.10.1. Disruptive Technologies in Industry 4.0
- 4.10.2. The Importance of the Human Factor Key Factor

Module 5. Leading Industry 4.0

5.1. Leadership Abilities
- 5.1.1. Leadership Factors in the Human Factor
- 5.1.2. Leadership and Technology

5.2. Industry 4.0 and the Future of Production
- 5.2.1. Definitions
- 5.2.2. Production Systems
- 5.2.3. Future of Digital Production Systems

5.3. Effects of Industry 4.0
- 5.3.1. Effects and Challenges

5.4. Essential Technologies in Industry 4.0
- 5.4.1. Definition of Technologies
- 5.4.2. Characteristics of Technologies
- 5.4.3. Applications and Impacts

5.5. Digitization of Manufacturing
- 5.5.1. Definitions
- 5.5.2. Benefits of the Digitization of Manufacturing
- 5.5.3. Digital Twins

5.6. Digital Capabilities in an Organization
- 5.6.1. Development Digital Capabilities
- 5.6.2. Understanding the Digital Ecosystem
- 5.6.3. Digital Vision of the Business

5.7. Architecture Behind a Smart Factory
- 5.7.1. Areas and Operations
- 5.7.2. Connectivity and Security
- 5.7.3. Case Uses

5.8. Technology Markers in the Post-Covid Era
- 5.8.1. Technological Challenges in the Post-Covid Era
- 5.8.2. New Case Uses

5.9. The Era of Absolute Virtualization
- 5.9.1. Virtualization
- 5.9.2. The New Era of Virtualization
- 5.9.3. Advantages

5.10. Current Situation in Digital Transformation Gartner Hype
- 5.10.1. Gartner Hype
- 5.10.2. Analysis of Technologies and Their Status
- 5.10.3. Data Exploitation

Module 6. Robotics, Drones and Augmented Workers

6.1. Robotics
- 6.1.1. Robotics, Societies and Cinema
- 6.1.2. Components and Parts of Robot

6.2. Robotics and Advanced Automation: Simulators, Cobots
- 6.2.1. Transfer of Learning
- 6.2.2. Cobots and Case Uses

6.3. RPA (Robotic Process Automatization)
- 6.3.1. Understanding RPA and its Functioning
- 6.3.2. RPA Platforms, Projects and Roles

6.4. Robot as a Service (RaaS)
- 6.4.1. Challenges and Opportunities for Implementing Raas Services and Robotics in Enterprises
- 6.4.2. Operation of a Raas System

6.5. Drones and Automated Vehicles
- 6.5.1. Components and Drones Operation
- 6.5.2. Uses, Types and Applications of Drones
- 6.5.3. Evolution of Drones and Autonomous Vehicles

6.6. The Impact of 5G
- 6.6.1. Evolution of Communications and Implications
- 6.6.2. Uses of 5G Technology

6.7. *Augmented Workers*
- 6.7.1. Human-Machine Integration in Industrial Environments
- 6.7.2. Challenges in Worker-Robot Collaboration

6.8. Transparency, Ethics and Traceability
- 6.8.1. Ethical Challenges in Robotics and Artificial Intelligence
- 6.8.2. Monitoring, Transparency and Traceability Methods

6.9. Prototyping, Components and Evolution
- 6.9.1. Prototyping Platforms
- 6.9.2. Phases to Make a Prototype

6.10. Future of Robotics
- 6.10.1. Trends in Robotization
- 6.10.2. New Types of Robots

Module 7. Industry 4.0 Automation Systems

7.1. Industrial Automation
- 7.1.1. Automization
- 7.1.2. Architecture and Components
- 7.1.3. *Safety*

7.2. Industrial Robotics
- 7.2.1. Fundamentals of Industrial Robotics
- 7.2.2. Models and Impact on Industrial Processes

7.3. PLC Systems and Industrial Control
- 7.3.1. PLC Evolution and Status
- 7.3.2. Evolution of Programming Languages
- 7.3.3. Computer Integrated Automation CIM

7.4. Sensors and Actuators
- 7.4.1. Classification of Transducers
- 7.4.2. Types of Sensors
- 7.4.3. Standardization of Signals

7.5. Monitor and Manage
- 7.5.1. Types of Actuators
- 7.5.2. Feedback Control Systems

7.6. Industrial Connectivity
- 7.6.1. Standardized Fieldbuses
- 7.6.2. Connectivity

7.7. Proactive / Predictive Maintenance
- 7.7.1. Predictive Maintenance
- 7.7.2. Fault Identification and Analysis
- 7.7.3. Proactive Actions Based on Predictive Maintenance

7.8. Continuous Monitoring and Prescriptive Maintenance
- 7.8.1. Prescriptive Maintenance Concept in Industrial Environments
- 7.8.2. Selection and Exploitation of Data for Self-Diagnostics

7.9. *Lean Manufacturing*
- 7.9.1. *Lean Manufacturing*
- 7.9.2. Benefits Lean Implementation in Industrial Processes

7.10. Industrialized Processes in Industry 4.0. Use Case
- 7.10.1. Project definition
- 7.10.2. Technological Selection
- 7.10.3. Connectivity
- 7.10.4. Data Exploitation

Module 8. Industry 4.0- Services and Solutions I

8.1. Industry 4.0 and Business Strategies
- 8.1.1. Factors of Business Digitalization
- 8.1.2. Roadmap for Business Digitalization

8.2. Digitalization of Processes and the Value Chain
- 8.2.1. Value Chain
- 8.2.2. Key Steps in the Digitization of Processes

8.3. Sector Solutions Primary Sector
- 8.3.1. The Primary Economic Sector
- 8.3.2. Characteristics of Each Subsector

8.4. Digitization of the Primary Sector: *Smart Farms*
- 8.4.1. Main Characteristics
- 8.4.2. Keys Factors of Digitization

8.5. Digitization of the Primary Sector: Digital and Intelligent Agriculture
- 8.5.1. Main Characteristics
- 8.5.2. Keys Factors of Digitization

8.6. Sector Solutions Secondary Sector
- 8.6.1. The Secondary Economic Sector
- 8.6.2. Characteristics of Each Subsector

8.7. Digitization of the Secondary Sector: *Smart Factory*
- 8.7.1. Main Characteristics
- 8.7.2. Keys Factors of Digitization

8.8. Digitization of the Secondary Sector: Energy
- 8.8.1. Main Characteristics
- 8.8.2. Keys Factors of Digitization

8.9. Digitization of the Secondary Sector: Construction
- 8.9.1. Main Characteristics
- 8.9.2. Keys Factors of Digitization

8.10. Digitization of the Secondary Sector: Mining
- 8.10.1. Main Characteristics
- 8.10.2. Keys Factors of Digitization

Module 9. Industry 4.0 Services and Solutions II

9.1. Tertiary Sector Solutions
- 9.1.1. Tertiary Economic Sector
- 9.1.2. Characteristics of Each Subsector

9.2. Digitalization of the Tertiary Sector: Transportation
- 9.2.1. Main Characteristics
- 9.2.2. Keys Factors of Digitization

9.3. Digitization of the Tertiary Sector: e-Health
- 9.3.1. Main Characteristics
- 9.3.2. Keys Factors of Digitization

9.4. Digitization of the Tertiary Sector: *Smart Hospitals*
- 9.4.1. Main Characteristics
- 9.4.2. Keys Factors of Digitization

9.5. Digitization of the Tertiary Sector: *Smart Cities*
- 9.5.1. Main Characteristics
- 9.5.2. Keys Factors of Digitization

9.6. Digitalization of the Tertiary Sector: Logistics
- 9.6.1. Main Characteristics
- 9.6.2. Keys Factors of Digitization

9.7. Digitalization of the Tertiary Sector: Tourism
- 9.7.1. Main Characteristics
- 9.7.2. Keys Factors of Digitization

9.8. Digitization of the Tertiary Sector: *Fintech*
- 9.8.1. Main Characteristics
- 9.8.2. Keys Factors of Digitization

9.9. Digitalization of the Tertiary Sector: Mobility
- 9.9.1. Main Characteristics
- 9.9.2. Keys Factors of Digitization

9.10. Future Technological Tendencies
- 9.10.1. New Technological Innovations
- 9.10.2. Application Trends

Module 10. Internet of Things (IoT)

10.1. Cyber-Physical Systems (CPS) in the Industry 4.0 Vision
- 10.1.1. Internet of Things (IoT)
- 10.1.2. Components Involved in IoT
- 10.1.3. Cases and Applications of IoT

10.2. Internet of Things and Cyber-Physical Systems
- 10.2.1. Computing and Communication Capabilities to Physical Objects
- 10.2.2. Sensors, Data and Elements in Cyber-Physical Systems

10.3. Device Ecosystem
- 10.3.1. Typologies, Examples and Uses
- 10.3.2. Applications of the Different Devices

10.4. IoT Platforms and their Architecture
- 10.4.1. IoT Market Typologies and Platforms
- 10.4.2. Operation of an IoT Platform

10.5. *Digital Twins*
- 10.5.1. Digital Twins
- 10.5.2. Uses and Applications the Digital Twin

10.6. *Indoor & outdoor Geolocation (Real Time Geospatial)*
- 10.6.1. Indoor and Outdoor Geolocation Platforms
- 10.6.2. Implications and Challenges of Geolocation in an IoT Project

10.7. Security Intelligence Systems
- 10.7.1. Typologies and Platforms for Security Systems Implementation
- 10.7.2. Components and Architectures in Intelligent Safety Systems

10.8. IoT and IIoT Platform Security
- 10.8.1. Security Components in an IoT System
- 10.8.2. IoT Security Implementation Strategies

10.9. *Wearables at Work*
- 10.9.1. Types of Wearables in Industrial Environments
- 10.9.2. Lessons Learned and Challenges in Implementing Wearables in the Workplace

10.10. Implementing an API to Interact with a Platform
- 10.10.1. Types of APIs Involved in an IoT Platform
- 10.10.2. API Market
- 10.10.3. Strategies and Systems to Implement API Integrations

Thanks to this university degree you will be up to date with the most cutting-edge trends in Big Data, Machine Learning and Natural Language Processing"

07

Internship

Once the online theoretical stage has been passed, the academic itinerary includes a period of the Internship Program in a technological institution of reference. In this way, graduates will be immersed in the reality of a profession full of challenges. And they will do so with the help of a tutor who will accompany them throughout their on-site stay. This professional will provide students with the personalized assistance they need to significantly boost their careers to a higher level.

You will carry out your internship in the best technological institutions to significantly advance in your professional career”

The Internship Program period of this university degree is composed of a practical stay in a prestigious leading company in Digital Transformation, lasting 3 weeks, from Monday to Friday with consecutive 8-hour days of practical training alongside an adjunct specialist. During this stage, students will join a team of professionals of reference in Industry 4.0 and Artificial Intelligence. Therefore, graduates will apply in their daily practice the latest trends in areas such as Quantum Computing, Augmented Reality, Robotics or Drones.

In this training proposal, of a completely practical nature, the activities are aimed at developing and perfecting the necessary competencies for the provision of Digital Transformation and Industry 4.0 services in companies, and which are oriented towards specific knowledge for the exercise of the activity.

Graduates have an exceptional opportunity to expand their knowledge in technological areas in continuous expansion, such as blockchain, big data, robotics, drones or augmented workers. In addition, by carrying out this itinerary in a center of technological reference, they will develop their work in top-quality facilities to perfect their professional skills.

The practical part will be carried out with the active participation of the student performing the activities and procedures of each area of competence (learning to learn and learning to do), with the accompaniment and guidance of teachers and other training partners that facilitate teamwork and multidisciplinary integration as transversal competencies for the praxis of Digital Transformation and Industry 4.0 (learning to be and learning to relate).

The procedures described below will be the basis of the practical part of the program, and their implementation will be subject to the center's own availability and workload, the proposed activities being the following:

Module	Practical Activity
Artificial Intelligence and Big Data	Build and train Machine Learning models for applications such as classification, regression, clustering, etc
	Use Data Mining tools and techniques to analyze large volumes of information from various sources
	Develop chatbots and virtual assistants capable of providing automatic responses to customer queries.
	Use intelligent algorithms to optimize business and operational processes
	Create Neural Networks that contribute to Natural Language generation for tasks ranging from machine translation to sentiment analysis
Blockchain and Quantum Computing	Use different types of Blockchain and protocols to maintain a secure and decentralized record of transactions
	Handle Smart Contracts for tasks such as automated payments or supply chain management.
	Implement secure identity management systems, where users have full control over their personal data
	Provide cryptographic mechanisms with various quantum algorithms to prevent cyber attacks
Automation Systems	Develop procedures dedicated to real-time monitoring to supervise the status of machines, assets and industrial processes from any location
	Implement flexible systems that allow mass product customization, automatically adapting the production flow according to customer preferences and market demands
	Apply Lean Manufacturing in industrial processes
	Use standardized fieldbuses to integrate industrial devices and equipment (such as sensors, actuators or PLCs)
Module	**Practical Activity**
Internet of Things (IoT)	Use sensors to collect condition data (vibrations, temperature, energy consumption, etc.) so that companies can implement predictive maintenance systems
	Employ IoT to optimize supply chain efficiency by providing real-time data on the status of raw materials
	Integrate IoT devices with control systems and actuators to perform intelligent automation of industrial processes
	Master Wearables at Work devices to provide specific functionalities that improve safety, efficiency and productivity in the workplace
Virtual, Augmented and Mixed Reality	Handle advanced photo and video cameras to develop 360-degree visual assets
	Apply Virtual Reality to visualize large datasets in three-dimensional environments
	Use Augmented Reality to overlay contextual information and step-by-step guides on equipment or machinery in the workplace
	Build immersive virtual environments to enhance user experience

Thanks to this Hybrid Professional Master's Degree MBA, you will be prepared to join the most recognized technology companies in the market. Aspire to the top with TECH!"

Civil Liability Insurance

This institution's main concern is to guarantee the safety of the trainees and other collaborating agents involved in the internship process at the company. Among the measures dedicated to achieve this is the response to any incident that may occur during the entire teaching-learning process.

To this end, this entity commits to purchasing a civil liability insurance policy to cover any eventuality that may arise during the course of the internship at the center.

This liability policy for interns will have broad coverage and will be taken out prior to the start of the Internship Program period. That way professionals will not have to worry in case of having to face an unexpected situation and will be covered until the end of the internship program at the center.

General Conditions of the Internship Program

The general terms and conditions of the internship agreement for the program are as follows:

1. TUTOR: During the Hybrid Professional Master's Degree, students will be assigned with two tutors who will accompany them throughout the process, answering any doubts and questions that may arise. On the one hand, there will be a professional tutor belonging to the internship center who will have the purpose of guiding and supporting the student at all times. On the other hand, they will also be assigned with an academic tutor whose mission will be to coordinate and help the students during the whole process, solving doubts and facilitating everything they may need. In this way, the student will be accompanied and will be able to discuss any doubts that may arise, both clinical and academic.

2. DURATION: The internship program will have a duration of three continuous weeks, in 8-hour days, 5 days a week. The days of attendance and the schedule will be the responsibility of the center and the professional will be informed well in advance so that they can make the appropriate arrangements.

3. ABSENCE: If the students does not show up on the start date of the Hybrid Professional Master's Degree, they will lose the right to it, without the possibility of reimbursement or change of dates. Absence for more than two days from the internship, without justification or a medical reason, will result in the professional's withdrawal from the internship, therefore, automatic termination of the internship. Any problems that may arise during the course of the internship must be urgently reported to the academic tutor.

4. CERTIFICATION: Professionals who pass the Hybrid Professional Master's Degree will receive a certificate accrediting their stay at the center.

5. EMPLOYMENT RELATIONSHIP: the Hybrid Professional Master's Degree shall not constitute an employment relationship of any kind.

6. PRIOR EDUCATION: Some centers may require a certificate of prior education for the Hybrid Professional Master's Degree. In these cases, it will be necessary to submit it to the TECH internship department so that the assignment of the chosen center can be confirmed.

7. DOES NOT INCLUDE: The Hybrid Professional Master's Degree will not include any element not described in the present conditions. Therefore, it does not include accommodation, transportation to the city where the internship takes place, visas or any other items not listed.

However, students may consult with their academic tutor for any questions or recommendations in this regard. The academic tutor will provide the student with all the necessary information to facilitate the procedures in any case.

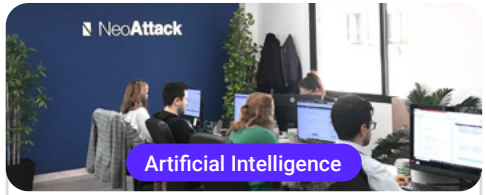
08

Where Can I Do the Internship?

In its philosophy of providing top-quality educational experiences, TECH offers students the opportunity to carry out a practical internship in highly prestigious institutions. In this way, graduates will put into practice all the knowledge acquired for the management of the most sophisticated technological tools of Artificial Intelligence. To do so, they will be supported by a group of professionals formed by professionals in Digital Transformation and Industry 4.0. In this way, you will enjoy an Internship Program that will enhance their skills to the highest level and that will mean a leap in quality in your professional career.

Complete your education with an Internship Program that will make you a true leader in Digital Transformation and Industry 4.0"

The student will be able to complete the practical part of this Hybrid Professional Master's Degree at the following centers:



NeoAttack

Country
Spain

City
Madrid

Address: Calle Santa Engracia 151, Planta 1, 1, Madrid

NeoAttack leads the market in carrying out SEO and advertising strategies.

Related internship programs:
Graphic Design
- Software Development

Boost your career path with holistic teaching, allowing you to advance both theoretically and practically"

09

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

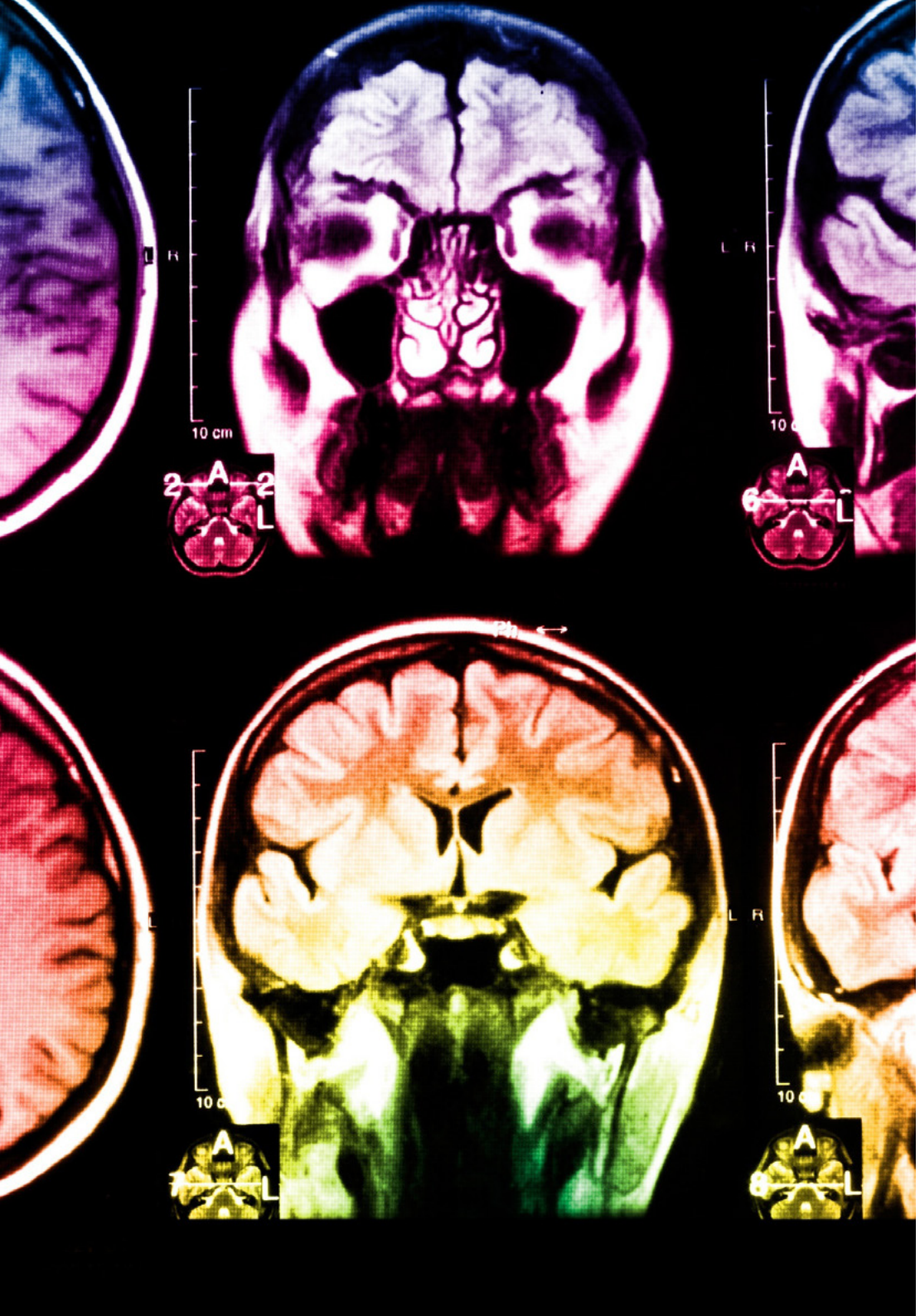
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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.

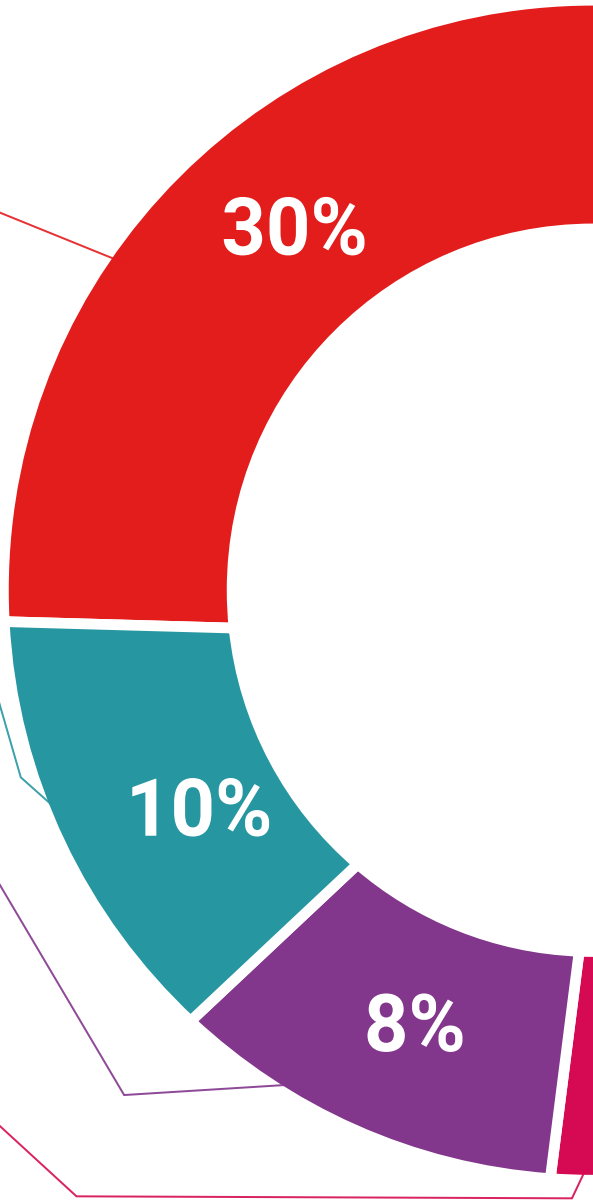
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

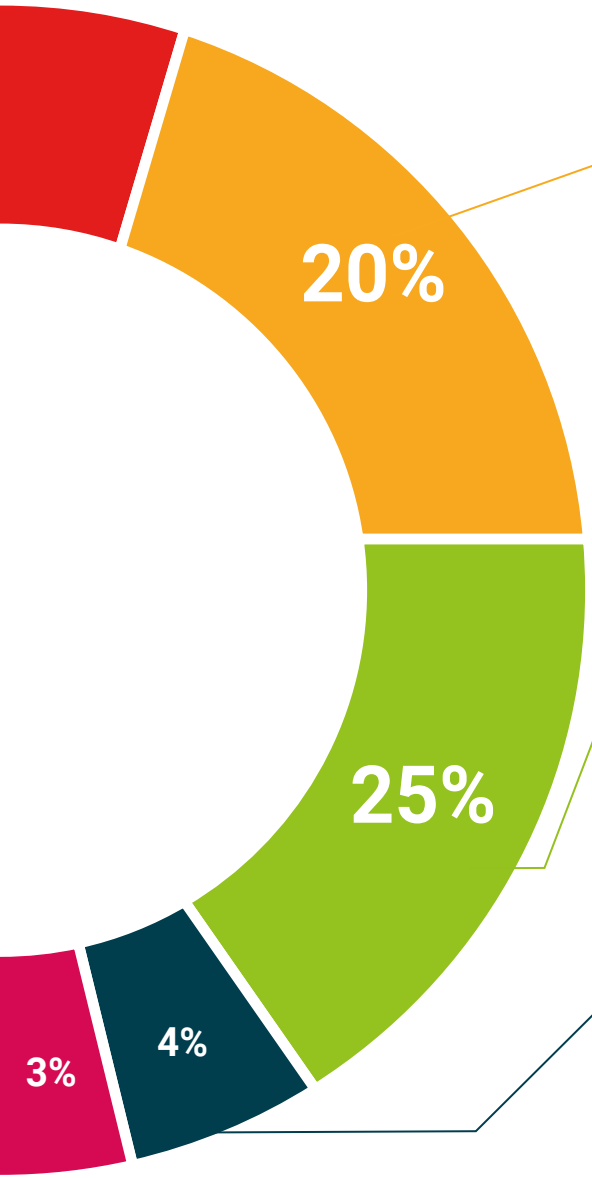
Practising Skills and Abilities

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.

10

Certificate

The Hybrid Professional Master's Degree in MBA in Digital Transformation and Industry 4.0 guarantees students, in addition to the most rigorous and up-to-date education, access to a Hybrid Professional Master's Degree issued by TECH Global University.

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

This private qualification will allow you to obtain a**Hybrid Professional Master's Degree diploma in MBA in Digital Transformation and Industry 4.0** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University, is an official European University publicly recognized by the Government of Andorra ***(official bulletin)***. Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University private qualification**, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Hybrid Professional Master's Degree in MBA in Digital Transformation and Industry 4.0**

Modality: **Hybrid (Online + Internship)**

Duration: **12 months.**

Credits **60 + 4 ECTS**


tech global university

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Hybrid Professional Master's Degree in MBA in Digital Transformation and Industry 4.0

This is a private qualification of 1,800 hours of duration equivalent to 60 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Dean

Unique TECH Code: AFWORD23S techtitute.com/certificates


Hybrid Professional Master's Degree in MBA in Digital Transformation and Industry 4.0

General Structure of the Syllabus

Subject type	ECTS
Compulsory (CO)	1,800
Optional (OP)	0
External Work Placement (WP)	0
Master's Degree Thesis (MDT)	0
	Total 1,800

General Structure of the Syllabus

Year	Subject	ECTS	Type
1º	Blockchain and Quantum Computing	200	CO
1º	Big Data and Artificial Intelligence	200	CO
1º	Virtual, Augmented and Mixed Reality	200	CO
1º	Industry 4.0	200	CO
1º	Leading Industry 4.0	200	CO
1º	Robotics, Drones and Augmented Workers	200	CO
1º	Industry 4.0 Automation Systems	150	CO
1º	Industry 4.0- Services and Solutions I	150	CO
1º	Industry 4.0 Services and Solutions II	150	CO
1º	Internet of Things (IoT)	150	CO

Dr. Pedro Navarro Illana
Dean

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*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

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Hybrid Professional Master's Degree

MBA in Digital Transformation and Industry 4.0

Modality: **Hybrid (Online + Internship)**
Duration: **12 months.**
Certificate: **TECH Global University**
Credits **60 + 4 ECTS**

HybridProfessional Master's Degree

MBA in Digital Transformation and Industry 4.0

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