Postgraduate Diploma
Enabling Technologies

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Postgraduate Diploma
Enabling Technologies

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

Website: **www.techtitute.com/us/artificial-intelligence/postgraduate-diploma/postgraduate-diploma-enabling-technologies**

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01

Introduction

El Machine Learning is a field of Artificial Intelligence focused on the development of algorithms that allow computers to learn patterns and make decisions. Among its most relevant applications, its capacity for Natural Language Processing stands out. In this way, these systems contribute significantly to machine translation, sentiment analysis and text generation. This is crucial in fields such as agriculture, since they predict crop yields, manage the use of natural resources and detect plant diseases. Aware of its numerous benefits and applications, more and more experts are deciding to specialize in this area. For this reason, TECH develops an online university degree that will delve into Big Data and Machine Learning.

You will apply the most advanced Blockchain techniques to ensure the security and cryptography of your projects thanks to this revolutionary program"

The most prestigious companies in the world are increasingly realizing the importance of carrying out digital transformation procedures, with the aim of increasing their productive capacity. Currently, the most sought-after branches are Blockchain and Quantum Computing. This is because they provide a high level of security, in terms of both data integrity and transparency. These systems use cryptographic techniques to ensure that transactions are immutable and that the information recorded on the blockchain cannot be modified without the consensus of the network.

In this context, TECH has implemented a Postgraduate Diploma that will provide professionals with the most advanced Industry 4.0 Enabling Technologies. The curriculum will delve into the discipline of Data Mining, which will allow aspects such as the extraction of valuable information from data or sentiment analysis. Likewise, the syllabus will delve into Mixed Reality in order to create environments where physical and virtual objects coexist and interact in real time. This will enable graduates to create world-class user experiences, also using devices such as glasses and wearables. Moreover, the program will provide students with cutting-edge tools for data visualization, including Tableau, Matplotlib and D3.

In this way, TECH has conceived a comprehensive program based on the innovative *Relearning* methodology, with the purpose of specializing highly competent Enabling Technologies specialists. This learning modality is based on the reiteration of key concepts in order to consolidate an optimal understanding. In addition, students are only required to have an electronic device connected to the Internet at their disposal to access the contents at any time, eliminating the need for on-site attendance or to comply with established schedules.

This **Postgraduate Diploma in Enabling Technologies** 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 technological solutions and new technologies
- The graphic, schematic, and practical contents with which they are created, provide practical information on the disciplines that are essential for professional practice
- Practical exercises where self-assessment can be used to improve learning
- Its special emphasis on innovative methodologies
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Content that is accessible from any fixed or portable device with an Internet connection

You will create 360-degree virtual spaces for users to enjoy fully immersive experiences"

You will identify the most effective protocols for building Chatbots that improve the productivity of organizations"

You will delve into the fundamentals of Deep Learning and process high quality images.

Through the 100% online methodology offered TECH, you will be able to learn effectively from home.

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

Through 450 hours of learning, graduates will have the most updated knowledge in the field of Enabling Technologies. In this same line, professionals will master the most modern tools of Big Data and Machine Learning. Likewise, they will carry out advanced techniques of Natural Language Processing through cutting-edge techniques, among which Doc2vec stands out. In this way, they will be able to develop advanced solutions such as Virtual Assistants or Chatbots. Experts will also be qualified to lead projects based on Blockchain and apply this technology to different business models through the business models through SSmart Contracts.

You will master Data Mining to analyze user behavior and provide personalized recommendations"

General Objectives

- Conduct a comprehensive analysis of the profound transformation and radical paradigm shift being experienced in the current global digitalization process
- Provide in-depth knowledge and the necessary technological tools to face and lead the technological leap and the challenges currently present in companies
- Mastering the digitalization procedures of companies and the automation of their processes to create new fields of wealth in areas such as creativity, innovation and technological efficiency
- Leading Digital Change

You will have case studies in simulated learning environments that will enhance your skills in Creating User Experiences"

Specific Objectives

Module 1. *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 2. 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 combine all these technologies to achieve immersive experiences

Module 3. 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

03

Course Management

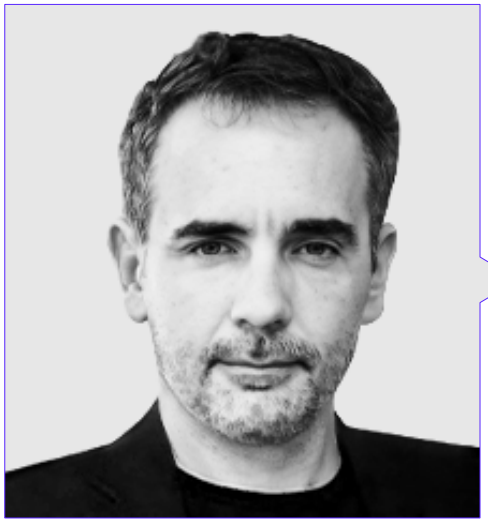
With the idea in mind of providing the students with a top quality education, this program is directed and taught by experts with extensive experience in the field of new technologies and their consultancy for companies. These professionals are responsible for the development of all the teaching resources available to the student throughout this program. Therefore, the contents that you will receive will have a complete labor applicability.

This Postgraduate Diploma brings together active professionals in the Areas of new technologies in order to offer you the most up-to-date contents in this field"

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. 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

Take the opportunity to learn about the latest advances in this field in order to apply it to your daily practice"

04

Structure and Content

This Postgraduate Diploma, composed of 3 modules, will provide students with a deep understanding of Enabling Technologies. The program will analyze the fundamental principles of *Big Data*, while offering the most modern tools to work with large volumes of data. In addition, the curriculum will delve into Machine Learning to develop innovative algorithms to predict trends from historical data. On the other hand, the program will focus on the construction of virtual worlds using Virtual Reality as well as Augmented and Mixed Reality. It will also address Quantum Computing, aimed at performing computations and problem solving.

Reach your most demanding work goals and boost your professional profile in one of the sectors with the brightest future"

Module 1. Big Data and Artificial Intelligence

1.1. Fundamental Principles of Big Data
- 1.1.1. Big Data
- 1.1.2. Tools to Work With Big Data

1.2. Data Mining and Warehousing
- 1.2.1. Data Mining Cleaning and Standardization
- 1.2.2. Information Extraction, Machine Translation, Sentiment Analysis, etc
- 1.2.3. Types of Data Storage

1.3. Data Intake Applications
- 1.3.1. Principles of Data intake
- 1.3.2. Data Ingestion Technologies to Serve Business Needs

1.4. Data Visualization
- 1.4.1. The Importance of Data Visualization
- 1.4.2. Tools to Carry It Out Tableau, D3, matplotlib (Python), Shiny®

1.5. Machine Learning
- 1.5.1. Understanding Machine Learning
- 1.5.2. Supervised and Unsupervised Learning
- 1.5.3. Types of Algorithms

1.6. Neural Networks (Deep Learning)
- 1.6.1. Neural Network: Parts and Operation
- 1.6.2. Types of Networks CNN, RNN
- 1.6.3. Applications of Neural Networks; Image Recognition and Natural Language Interpretation
- 1.6.4. Generative Text Networks: LSTM

1.7. Natural Language Recognition
- 1.7.1. PLN (Processing Natural Language)
- 1.7.2. Advanced PLN Techniques: Word2vec, Doc2vec

1.8. Chatbots and Virtual Assistants
- 1.8.1. Types of Assistants: Voice and Text Assistants
- 1.8.2. Fundamental Parts for the Development of an Assistant: Intents, Entities and Dialog Flow
- 1.8.3. Integrations: Web, Slack, WhatsApp, Facebook
- 1.8.4. Assistant Development Tools: Dialogflow, Watson Assistant

1.9. Emotions, Creativity and Personality in IA
- 1.9.1. Understand How to Detect Emotions Using Algorithms
- 1.9.2. Creating a Personality: Language, Expressions and Content

1.10. Future of Artificial Intelligence

1.11. Reflections

Module 2. Virtual, Augmented and Mixed Reality

2.1. Market and Tendencies
- 2.1.1. Current Market Situation
- 2.1.2. Reports and Growth by Different Industries

2.2. Differences Between Virtual, Augmented and Mixed Reality
- 2.2.1. Differences Between Immersive Realities
- 2.2.2. Immersive Reality Typology

2.3. Virtual Reality Cases and Uses
- 2.3.1. Origin and Fundamentals of Virtual Reality
- 2.3.2. Cases Applied to Different Sectors and Industries

2.4. Augmented Reality Cases and Uses
- 2.4.1. Origin and Fundamentals of Augmented Reality
- 2.4.2. Cases Applied to Different Sectors and Industries

2.5. Mixed and Holographic Reality
- 2.5.1. Origin, History and Fundamentals of Mixed and Holographic Reality
- 2.5.2. Cases Applied to Different Sectors and Industries

2.6. 360º Photography and Video
- 2.6.1. Camera Typology
- 2.6.2. Uses of 360 Images
- 2.6.3. Creating a Virtual Space in 360 Degrees

2.7. Virtual World Creation
- 2.7.1. Platforms for the Creation of Virtual Environments
- 2.7.2. Strategies for the Creation of Virtual Environments

2.8. User Experience (UX)
- 2.8.1. Components in the User Experience
- 2.8.2. Tools for the Creation of User Experiences

2.9. Devices and Glasses for Immersive Technologies
- 2.9.1. Device Typology on the Market
- 2.9.2. Glasses and Wearables: Operation, Models and Uses
- 2.9.3. Smart Glasses Applications and Evolution

2.10. Future Immersive Technologies
- 2.10.1. Tendencies and Evolution
- 2.10.2. Challenges and Opportunities

Module 3. Blockchain and Quantum Computing

3.1. Aspects of Decentralization
- 3.1.1. Market Size, Growth, Companies and Ecosystem
- 3.1.2. Fundamentals of Blockchain

3.2. Background: Bitcoin, Ethereum, etc
- 3.2.1. Popularity of Decentralized Systems
- 3.2.2. Evolution of Decentralized Systems

3.3. Blockchain Operation and Examples
- 3.3.1. Types of Blockchain and Protocols
- 3.3.2. Wallets, Mining and More

3.4. Characteristics of Blockchain Networks
- 3.4.1. Functions and Properties of Blockchain Networks
- 3.4.2. Applications: Cryptocurrencies, Reliability, Chain of Custody, etc

3.5. Types of Blockchain
- 3.5.1. Public and Private Blockchains
- 3.5.2. Hard And Soft Forks

3.6. Smart Contracts
- 3.6.1. Intelligent Contracts and Their Potential
- 3.6.2. Smart Contract Applications

3.7. Industry Use Models
- 3.7.1. Blockchain Applications by Industry
- 3.7.2. Blockchain Success Stories by Industry

3.8. Security and Cryptography
- 3.8.1. Objectives of Cryptography
- 3.8.2. Digital signatures and Hash functions

3.9. Cryptocurrencies and Uses
- 3.9.1. Types of Cryptocurrencies Bitcoin, Hyperledger, Ethereum, Litecoin, etc
- 3.9.2. Current and Future Impact of Cryptocurrencies
- 3.9.3. Risks and Regulations

3.10. Quantum Computing
- 3.10.1. Definition and Keys
- 3.10.2. Uses of Quantum Computing

This program will will boost your career path in just 6 months. Enroll now!"

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

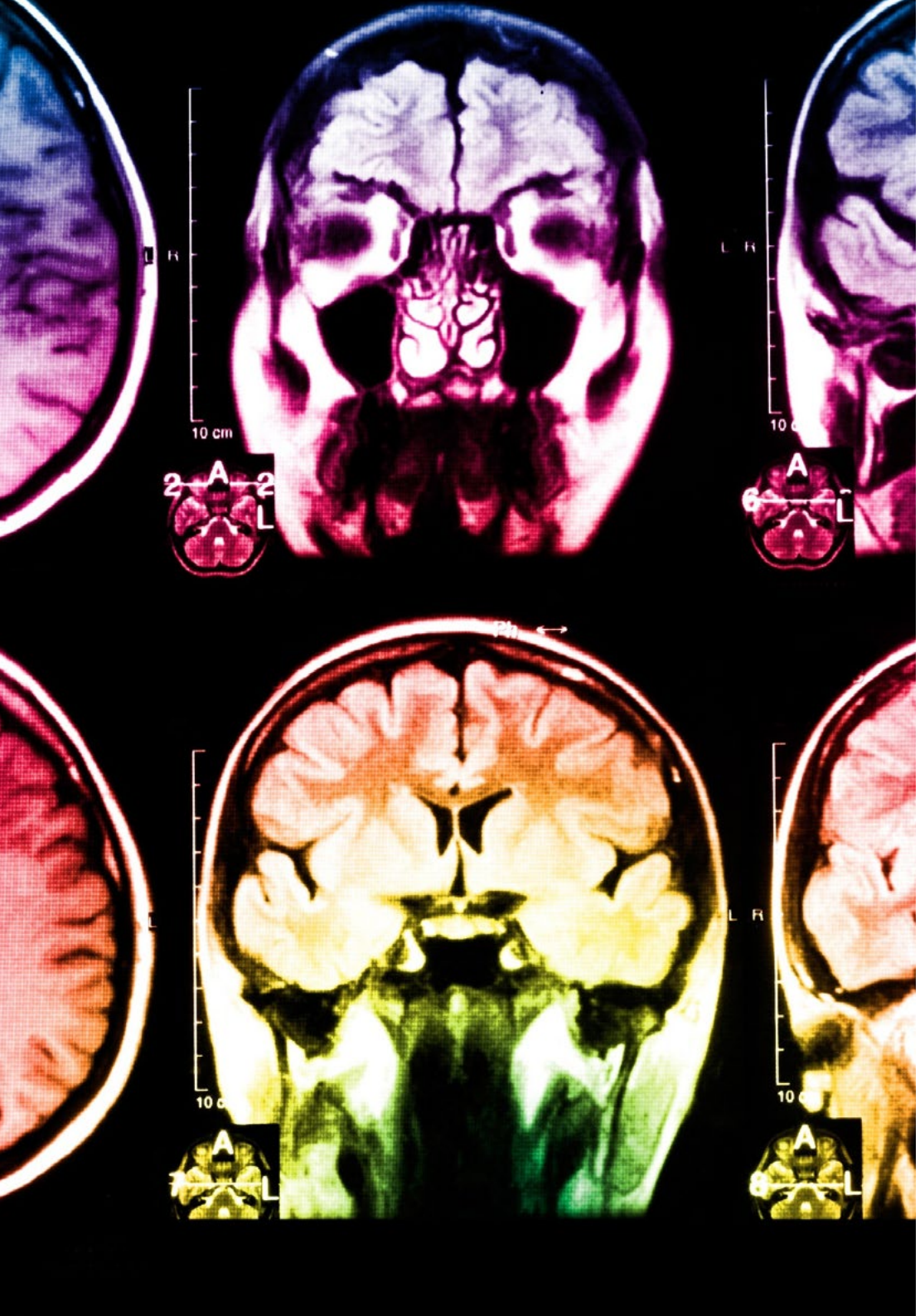
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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.

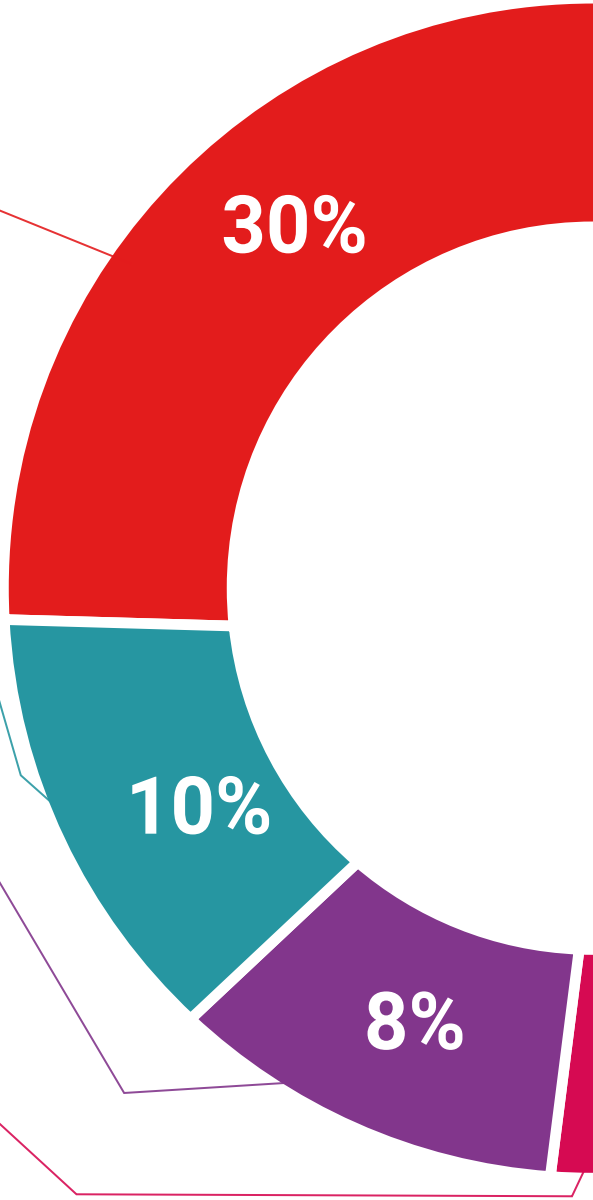
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

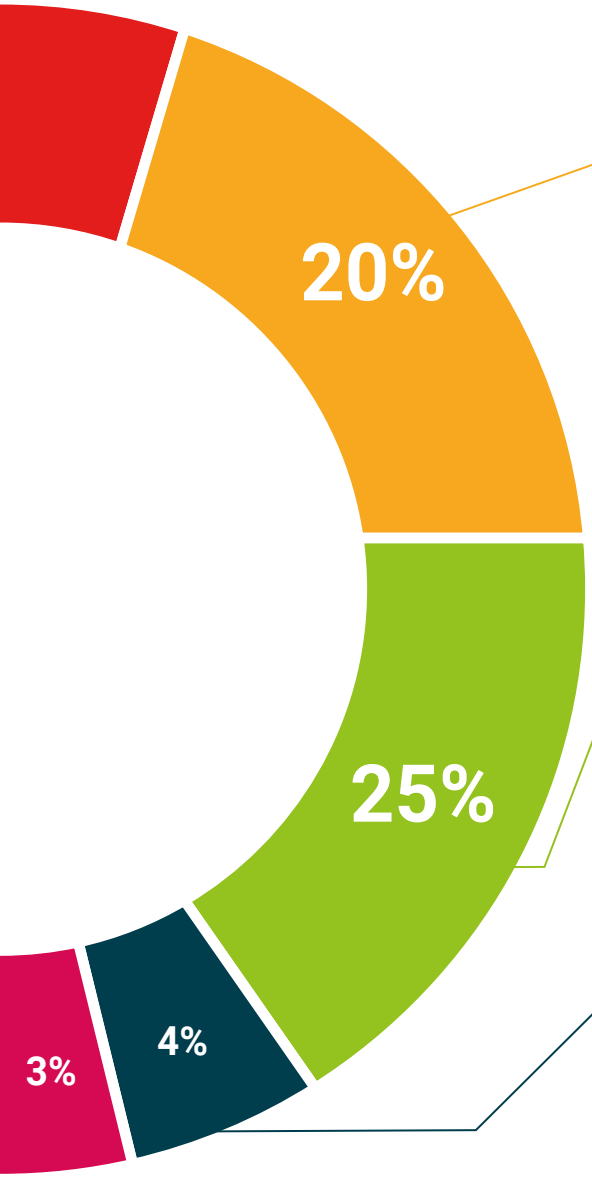
Practising Skills and Abilities

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 Diploma in Enabling Technologies 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 Enabling Technologies** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Diploma** issued by **TECH Technological University** via tracked delivery*.

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

Title: **Postgraduate Diploma in Enabling Technologies**

Official Nº of Hours: **450 h.**

tech technological university

Awards the following

DIPLOMA

to

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

For having passed and accredited the following program

POSTGRADUATE DIPLOMA

in

Enabling Technologies

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 diploma issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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