Postgraduate Certificate

Smart Cities

tech technological university

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Postgraduate Certificate

Smart Cities

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

Website: **www.techtitute.com/pk/engineering/postgraduate-certificate/smart-cities**

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01

Introduction

It is predicted that by 2024, 90% of the electronic devices used by the inhabitants of a Smart City will be connected to the Internet. This type of city is a consequence of the acceleration of urbanity and Industry 4.0 itself, where citizens demand an improvement in their quality of life in a sustainable way. This program, which is completely online, shows graduates how Smart Cities will become platforms that will transform today's cities into more efficient, sustainable and safe spaces. In this way, the engineer becomes a key component of the future. In addition, these cities serve to develop new opportunities in engineering, therefore, new job opportunities will open up for them.

Completion of this Postgraduate Certificate will place you as an Engineering and Industry 4.0 professional at the forefront of the latest developments in the industry"

Smart Cities respond to the changing needs of public administrations, companies and the population through new technologies. This means an improvement in the quality of public services and transparency for a city with a more efficient, accessible and inclusive administration. Smart Cities are a booming area of work in which there is still a long way to go, to discover and to investigate.

Smart Cities could be defined as the equivalent of smart factories, which integrate Industry 4.0 technologies in all their processes. The engineer with this qualification will specialize in the foundations of the technological architecture of Smart Cities. These are the parameterization and sensorization of their environments, the datification of public infrastructures, the measurement and scanning of social events and the advanced analysis of urban dynamics of devices.

All this with the aim of improving the maintenance of facilities and buildings; knowing and predicting the behavior of the population; implementing new services; optimizing current services and making very accurate predictions to increase the efficiency of the rest of the ecosystems that make up the city.

Furthermore, this Postgraduate Certificate has the best 100% online study methodology, which eliminates the need to attend classes in person or have to comply with a predetermined schedule. Over the course of 6 weeks, students will deepen their understanding of the scope of Digital Twins, understanding the competitive advantages they bring, so they will be positioned at the forefront of technology and will be able to lead ambitious projects in the present and in the future.

This **Postgraduate Certificate in Smart Cities** contains the most complete and up-to-date program on the market. The most important features include:

- Case studies presented by experts in Smart Cities
- 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

A Smart City actively promotes sustainable economic development and a high quality of life"

It is part of the development of this technology and exploits new business opportunities based on its own connectivity"

Smart Cities require highly qualified engineers in their specifics, and that can be you.

You will play a key role in the development of Digital Cities thanks to your advanced knowledge.

The program's teaching staff includes professionals from the sector 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

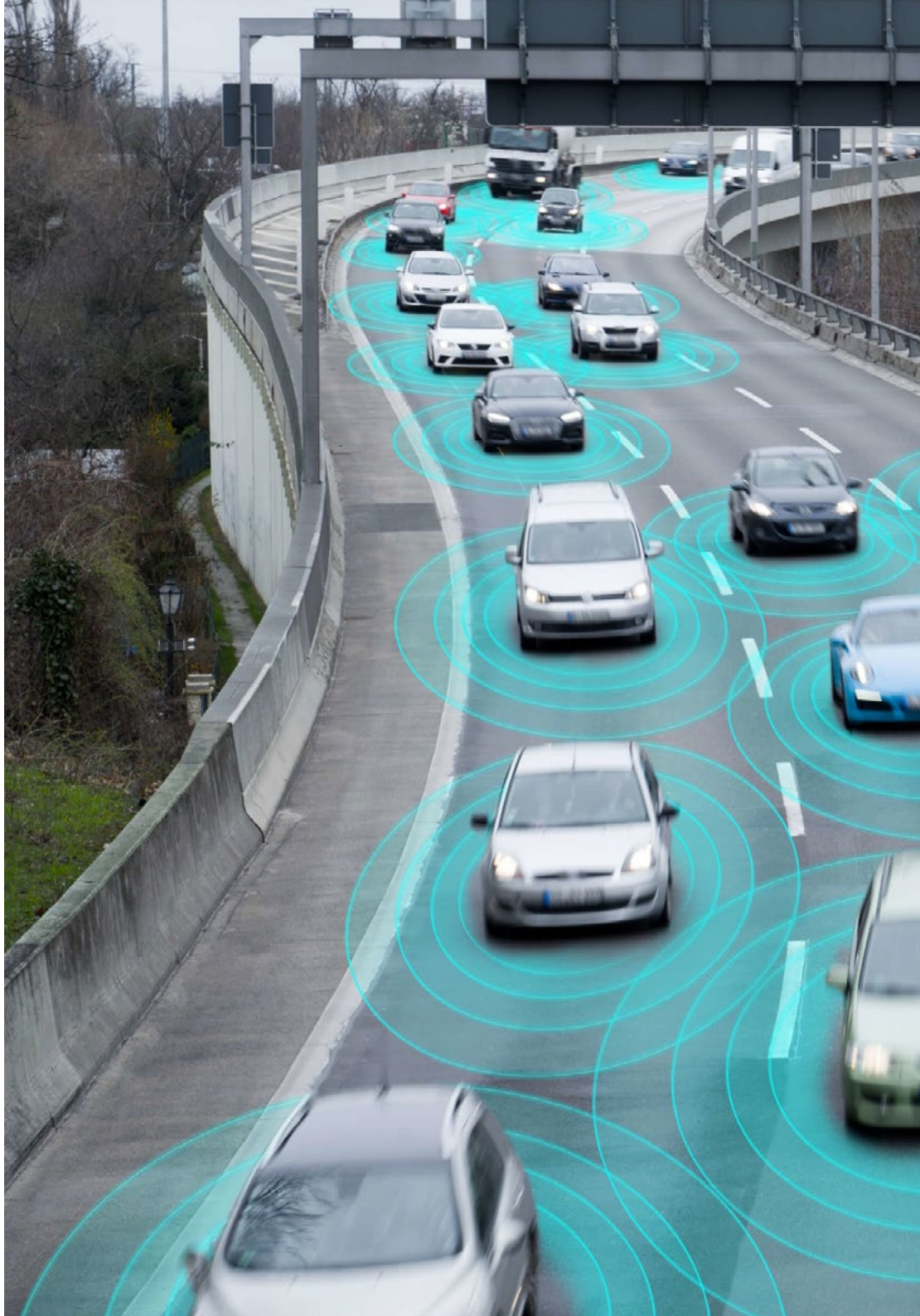
The Postgraduate Certificate in Smart Cities focuses on addressing the topic of Smart Cities from a practical point of view, in order to give students a sense of security that will allow them to be more effective in their daily practice. The direct application of the acquired knowledge is an added professional value that very few Engineer computer scientists specialized in information and communication technologies can offer.

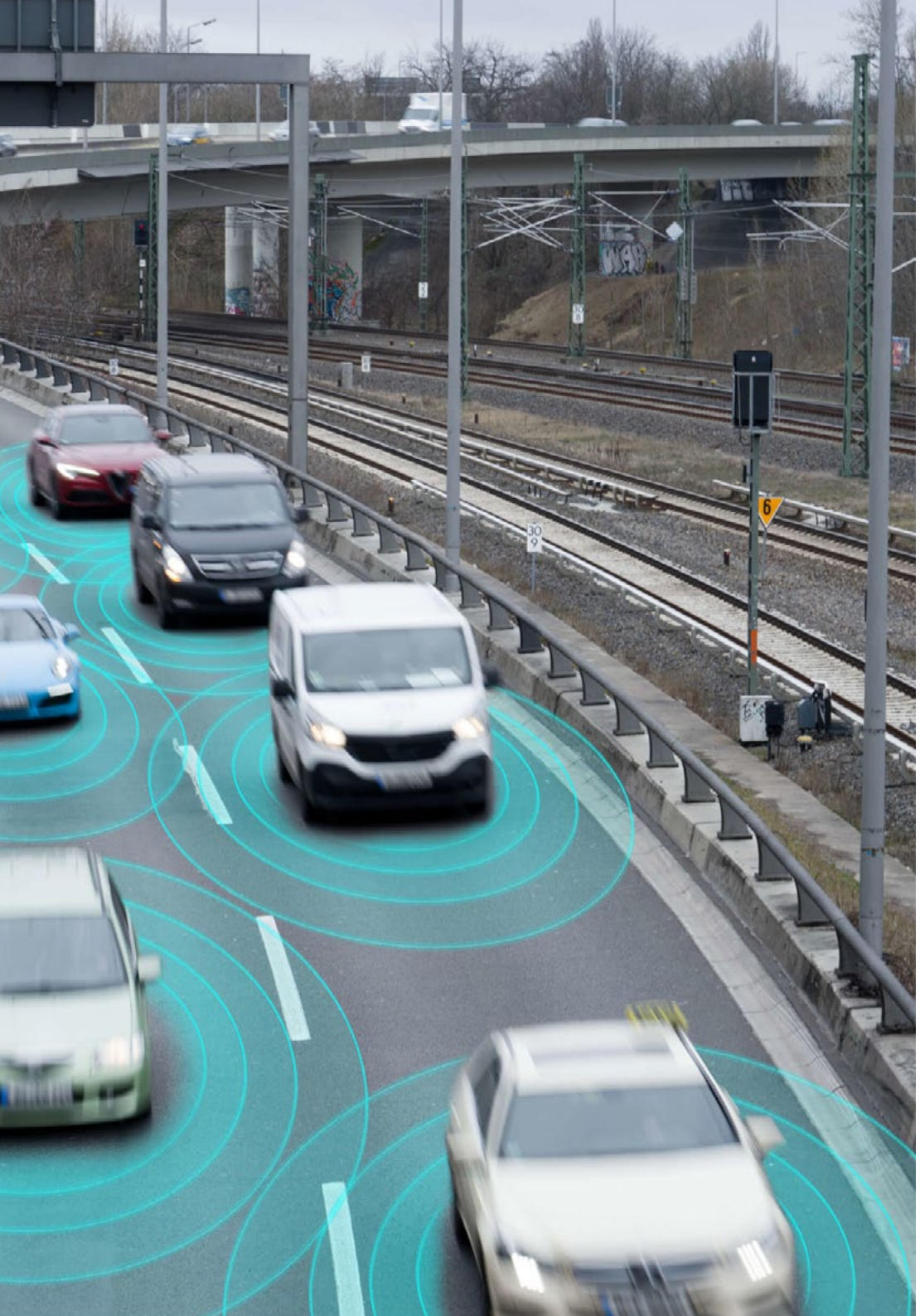
You will be able to make very accurate predictions to increase the efficiency of the rest of the ecosystems that make up the city"

General Objectives

- Present the current panorama of the Smart City model in different countries
- Analyze the advantages of a hyper-connected Smart City model
- Establish different Big Data models and their prediction models
- Propose application scenarios in different city typologies

Thanks to this Postgraduate Certificate you will be able to position yourself in a sector that is requiring more and more engineering experts in this subject"





Specific Objectives

- Analyze the technological platform
- Determine what a Digital City Twin is (Virtual Model)
- Establish which the monitoring layers are: density, movement, consumptions, water, wind, solar radiation, etc
- Carry out a comparative analysis of the following variables
- Integrate the different sensor networks (IoT/M2M) as well as the behavioral parameters of the inhabitants of the city (treated as human sensors)
- Develop a detailed vision of how Smart Cities will influence the future of people
- Establish new uses
- Generate interest in the implementation of smart city models

03

Course Management

This Postgraduate Certificate is taught by highly prestigious professionals in the fields of Engineering and Smart Cities, who contribute with their years of work experience, as well as the knowledge they have acquired from research in the field, to the program. All this, to take the engineer to the highest level. As a result, the professional who successfully completes the program will have a global vision of the application of the different technologies involved in global digitalization and the ability to apply them.

TECH's training programs count on first class professionals who bring their many years of experience to the Postgraduate Students"

Management

Mr. Molina Molina, Jerónimo

- He is currently leading several relevant projects in the field of Artificial Intelligence
- AI Engineer & Software Architect. NASSAT - Internet Satellite in Motion
- Sr. Consultant at Hexa Ingenieros
- Expert in Artificial Intelligence based solutions
- He is currently leading several relevant projects in the field of Artificial Intelligence
- Computer Engineer (Alicante University)
- Expert in Business Creation and Development (Bancaixa - FUNDEUN Alicante)
- Computer Engineer (Alicante University)
- Executive MBA (European Business Campus Forum)
- Master in Artificial Intelligence (Avila Catholic University)

Professors

Dr. Villalba García, Alfredo

- Professor of Domotics at CEDOM
- Design Engineer at ITT Standard Electric and ALCATEL
- Industrial Engineer from the School of Industrial Engineering of the Polytechnic University of Madrid
- Specialist in Robotics and Automation
- Master's Degree in Retail Technology
- Master's Degree in Industrial Automation
- Master's Degree in Domotics and Inmotics
- Ph.D. in Computer Science from the University of Fontainebleau
- CEO and Founding Partner of INMOMATICA and CQUENT

04

Structure and Content

Through this program, TECH provides engineers with a global review of all the aspects that are involved in the creation of a Smart City. This Postgraduate Certificate develops a Smart City model based on a neural system of sensors that collect and return data in real time, turning it into an entity with a life of its own. All this from a practical and innovative business perspective, thereby ensuring that the contents have a highly practical focus.

The contents presented in this Program will allow you to have a theoretical basis when facing real situations"

Module 1. Smart Cities as Innovation Tools

1.1. From Cities to Smart Cities
- 1.1.1. From Cities to Smart Cities
- 1.1.2. Cities Over Time and Cultures in Cities
- 1.1.3. Evolution of City Models

1.2. Technologies
- 1.2.1. Technological Application Platforms
- 1.2.2. Services/Citizen Interfaces
- 1.2.3. Technological Typologies

1.3. City as a Complex System
- 1.3.1. Components of a City
- 1.3.2. Interactions between Components
- 1.3.3. Applications: Products and Services in the City

1.4. Intelligent Safety Management
- 1.4.1. Current State
- 1.4.2. Technological Management Environments in the City
- 1.4.3. Future: Smart Cities in the Future

1.5. Intelligent Cleaning Management
- 1.5.1. Application Models in Intelligent Cleaning Services
- 1.5.2. Systems: Intelligent Cleaning Services Application
- 1.5.3. Future of Intelligent Cleaning Services

1.6. Intelligent Traffic Management
- 1.6.1. Traffic Evolution: Complexity and Factors Hindering Traffic Management
- 1.6.2. Problems
- 1.6.3. E-Mobility
- 1.6.4. Solutions

1.7. Sustainable City
- 1.7.1. Energy
- 1.7.2. The Water Cycle
- 1.7.3. Management Platform

1.8. Intelligent Leisure Management
- 1.8.1. Business Models
- 1.8.2. Urban Leisure Evolution
- 1.8.3. Associated Services

1.9. Large Social Event Management
- 1.9.1. Movement
- 1.9.2. Capacities
- 1.9.3. Health

1.10. Conclusions on the Present and Future of Smart Cities
- 1.10.1. Technology Platforms and Problems
- 1.10.2. Technologies, Integration in Heterogeneous Environments
- 1.10.3. Practical Applications in Different City Models

You will learn everything you need to become a successful professional. Seize your chance"

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 that you are presented with 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

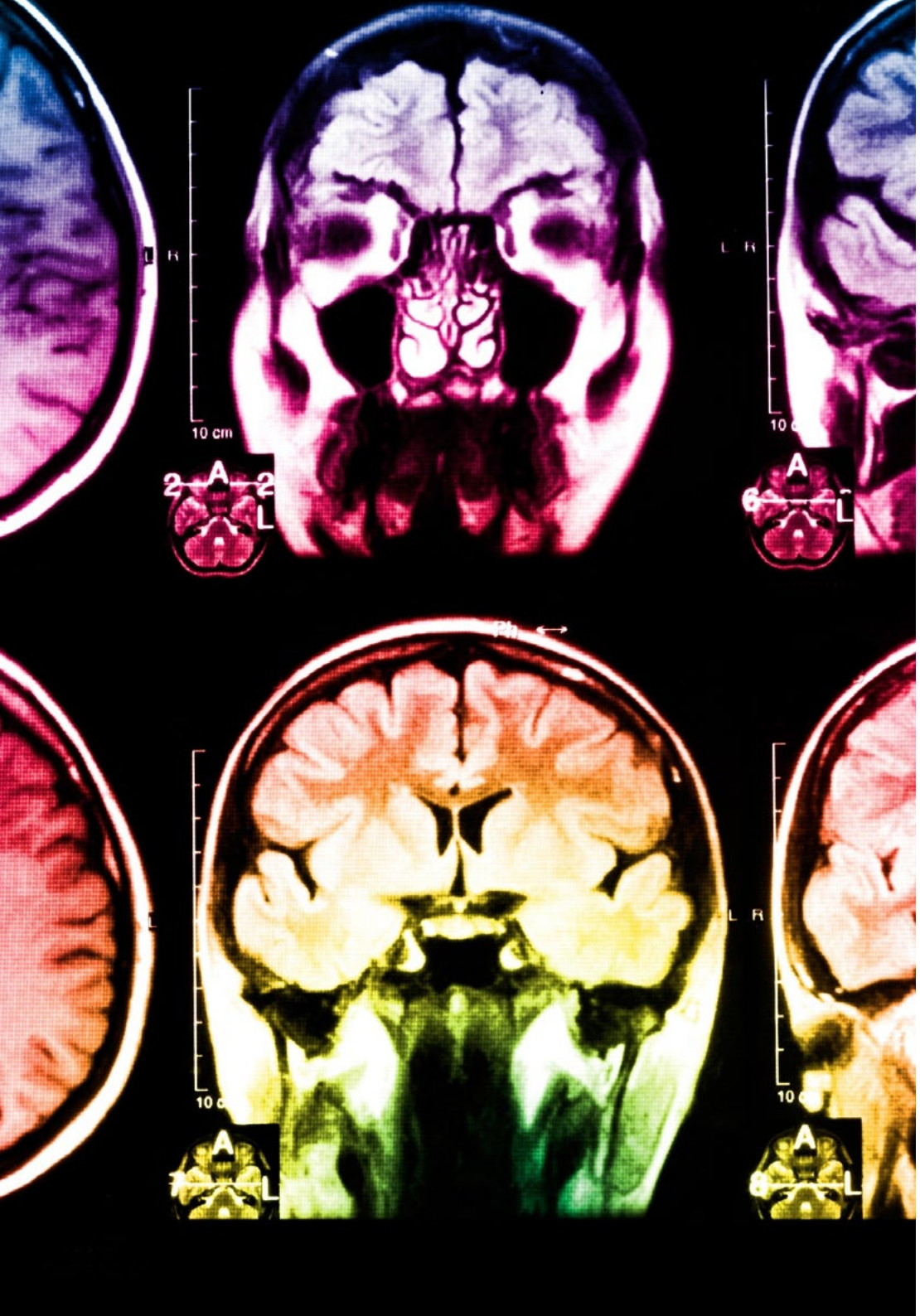
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

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.



In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically. This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.

This program offers the best educational material, prepared with professionals in mind:

Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.

Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

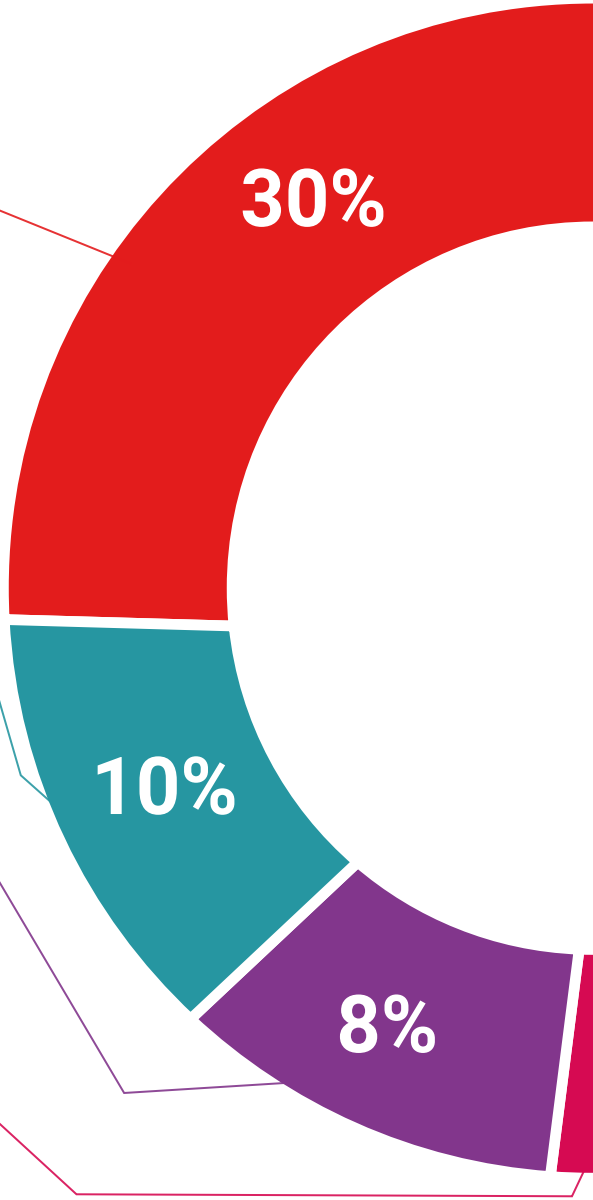
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

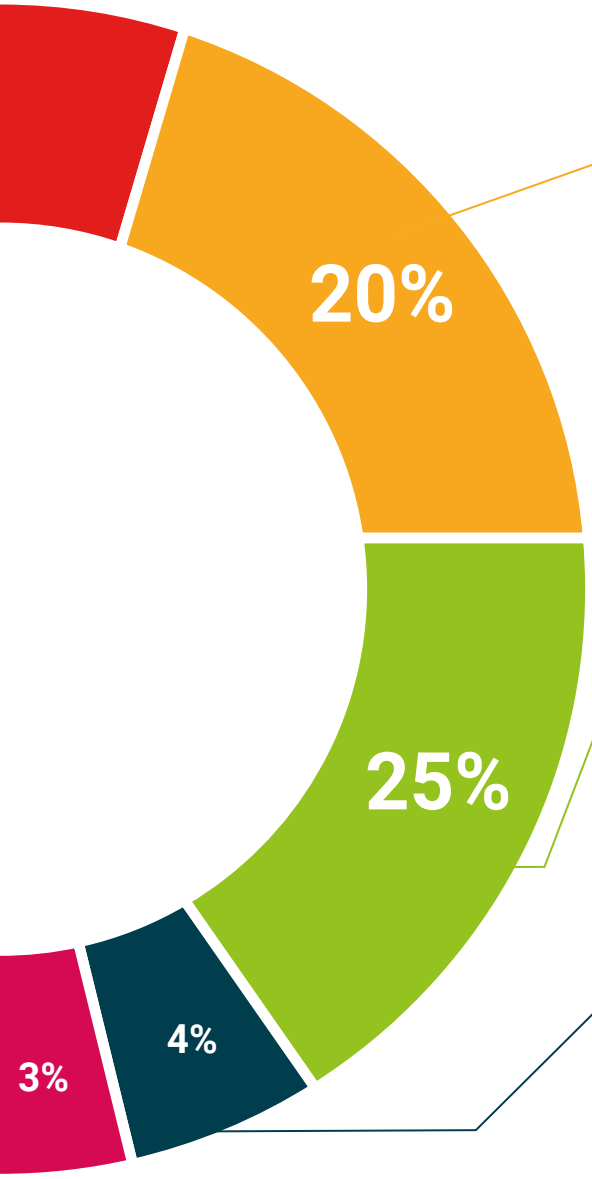
Practising Skills and Abilities

They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.

Additional Reading

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





Case Studies

Students will complete a selection of the best case studies chosen specifically for this program. Cases that are presented, analyzed, and supervised by the best specialists in the world.

Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".

Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.

06

Certificate

The Postgraduate Certificate in Smart Cities guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.

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

This **Postgraduate Certificate in Smart Cities** 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 Certificate** issued by **TECH Technological University** via tracked delivery*.

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

Title: **Postgraduate Certificate in Smart Cities**

Official Nº of Hours: **150 h.**


tech technological university

Awards the following

CERTIFICATE

to

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

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Smart Cities

This is a qualification awarded by this University, equivalent to 150 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro

Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. 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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