Postgraduate Certificate

Transversal Smart City Solutions

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Postgraduate Certificate
Transversal Smart City Solutions

- Modality: **online**
- Duration: **8 weeks**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Website: **www.techtitute.com/in/engineering/postgraduate-certificate/transversal-smart-city-solutions**

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01

Introduction

Public administrations are increasingly developing a multitude of transversal solutions that make it possible to streamline procedures with citizens and the management of cities. In this environment, there is a need to find specialized and qualified professionals for the development of intelligent infrastructures that will allow a step forward in this field. In this program, TECH offers a specific education with an innovative academic program and an exceptional team of teachers endorsed by their professional experience. A successful program for professionals looking for further training.

Digital transformation has arrived to revolutionize life in cities. Don't think twice and get trained in this booming sector that demands specialized professionals"

Today, Smart Cities are at the forefront of digital transformation processes and, according to all technological indicators, we are only at the beginning of this journey, since, as these digital capabilities are explored, new paths and application areas are being incorporated into the smart city ecosystem.

This Postgraduate Certificate will address smart city services, focusing on transversal solutions. Specifically, this type of infrastructure responds to a need shared by several areas of the city or that require the participation of several departments of the municipal management for its materialization, in order to solve specific challenges of the cities.

Within Smart City projects there are different types of transversal solutions, which are distributed in three large blocks: solutions that integrate information and communication elements that improve the services provided to citizens; solutions that require the integration of information sources from different areas to offer specific improvements; and solutions that make city information available to citizens.

Specifically, thanks to these types of transversal solutions, improvements can be made for the benefit of citizens, due to their accessibility, time savings and economy, among other aspects. This way, the creation of citizen cards and new projects that bring together information on internal and external city objects; tools for urban planning, mobility management and social policy optimization systems; or urban innovation laboratories, citizen portals and apps, open data portals, and data marketplaces and global operation and control centers of the city, have been achieved.

To achieve this goal, TECH offers a cutting-edge update adapted to the latest developments in this field, with an up-to-date syllabus and carried out by experienced professionals willing to make all their knowledge available to their students. It should be noted that since this is a 100% online Postgraduate Certificate, the student is not conditioned by fixed schedules or the need to move to another physical location, but can access the contents at any time of the day, balancing their work or personal life with their academic life.

This **Postgraduate Certificate in Transversal Smart City Solutions** contains the most complete and up-to-date program on the market. Its most notable features are:

- Case studies presented by experts in Smart Cities.
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice.
- Practical exercises where self-assessment can be used to improve learning.
- Special emphasis on innovative methodologies in transversal solutions
- 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

The completion of this Postgraduate Certificate will place engineering and architecture professionals at the forefront of the latest developments in the sector"

This Postgraduate Certificate is the best investment you can make in the selection of a refresher program in the field of Smart Cities. We offer you quality and free access to content"

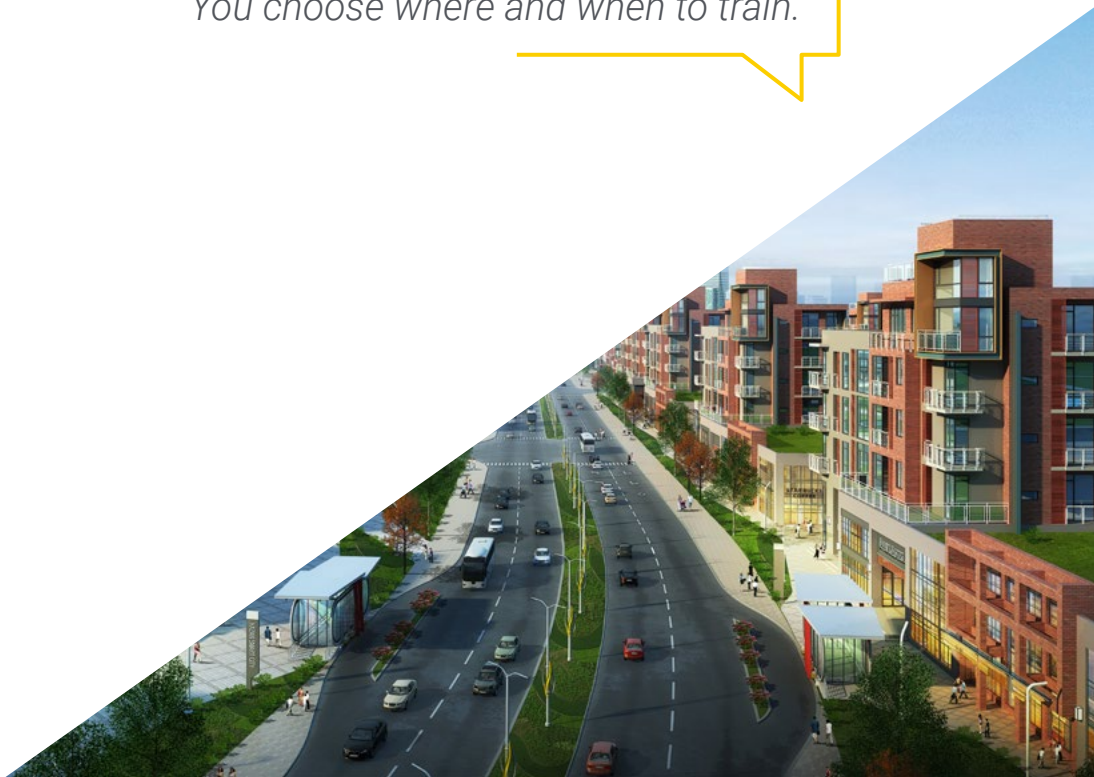
This program comes with the best educational material, providing you with a contextual approach that will facilitate your learning.

This 100% online Postgraduate Certificate will allow you to balance your studies with your professional work. You choose where and when to train.

Its teaching staff includes professionals from the fields of engineering and architecture, who contribute their work experience to this program, as well as renowned specialists from prestigious universities and leading societies.

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 learning programmed to train 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 throughout the program. To do so, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts in Transversal Smart City Solutions.



02

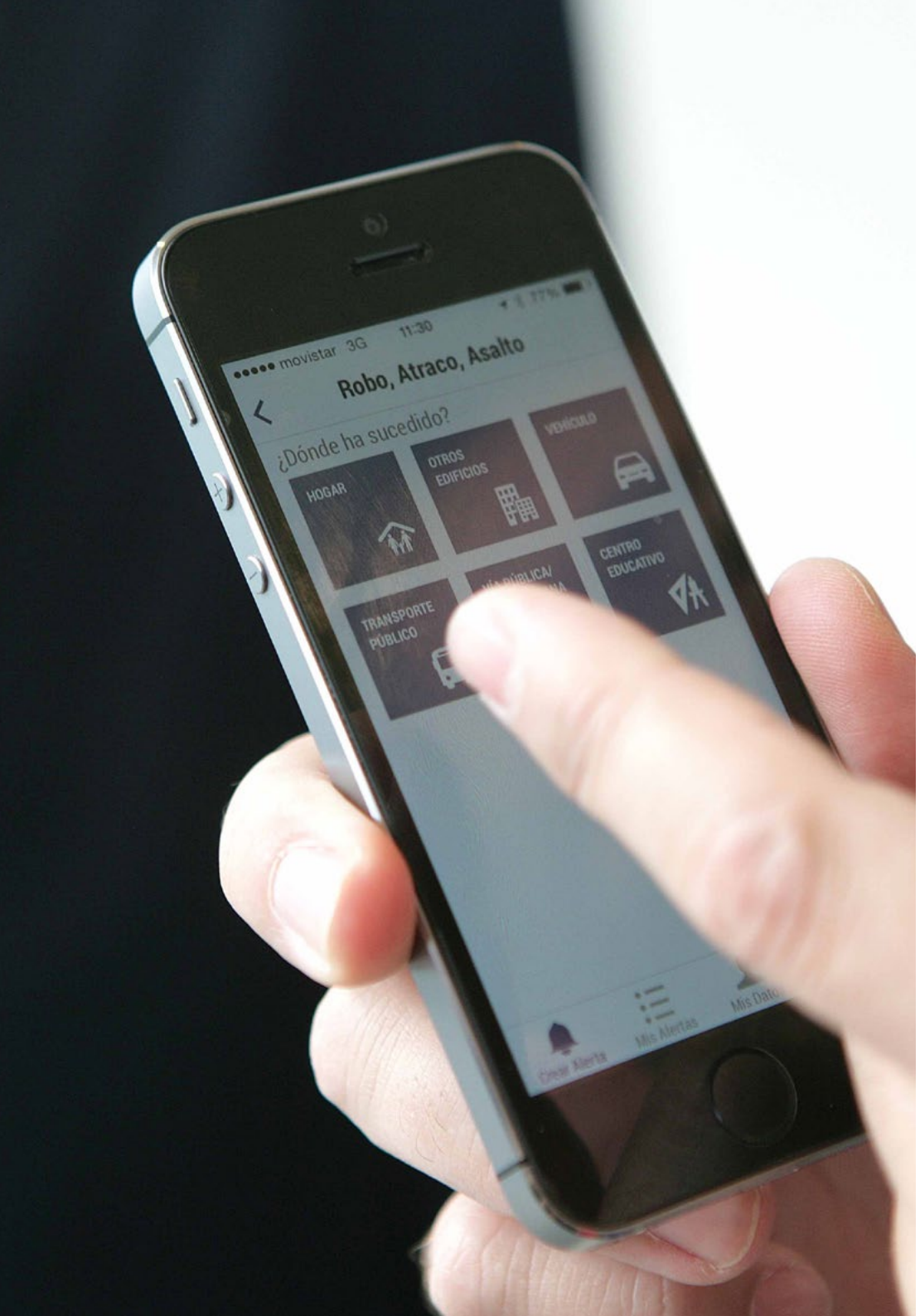
Objectives

The program in Transversal Smart City Solutions aims to help professionals acquire and learn about the main developments in this field, which will allow them to practice their profession with the highest quality and professionalism.

Our goal is for you to become the best professional in your sector. And for this we have the best methodology and content"

General Objectives

- Recognize smart city projects as particular use case of digitalization projects through platforms, to know their main particularities and the state of the art of these projects in an international context
- Value the two essential elements in any smart city project, data as the main asset and the citizen as the main motivator of such projects
- Analyze the different technologies and models to address the digital transformation of cities in depth and understand the advantages and opportunities that a model based on integration platforms offers
- Delve into the general architecture of Smart Cities Platforms and the applicable reference legislation, using international standards
- Identify the role that new digital technologies play in the construction of the smart city model: LPWAN, 5G, Cloud and Edge Computing, IoT, Big Data, Artificial Intelligence
- Know the functionalities of the different layers that constitute the digital platforms for cities in detail: support layer, acquisition layer, knowledge layer and interoperability layer
- Differentiate between digital government services and Smart city services, the possibilities of integration between the two worlds and the resulting new services for citizens, public administration services 4.0
- Differentiate between the two types of solutions offered within the Smart Cities smart services layer: vertical solutions and transversal solutions
- In-depth breakdown of the main vertical solutions applied in cities: waste management, parks and gardens, parking, public transport management, urban traffic control, environment, security and emergencies, water consumption and energy management
- Know the transversal solutions of the smart services layer that can be implemented in smart city projects in detail
- Delve into the difference between city management and nation management, and identify their main challenges and lines of activity
- Acquire the skills and knowledge necessary for the design of technological solutions in the fields of tourism, home care, agriculture, ecosystemic spaces and urban service provision
- Have a global perspective of Smart Cities projects, identifying the most useful tools in each phase of the project
- Recognize the keys to success and how to deal with the possible difficulties that a smart city project may present
- Identify the main trends and paradigms that will serve as leverage for the future transformation of Smart Cities
- Conceptually design plans and solutions aligned with the Sustainable Development Goals of the 2030 Agenda



Specific Objectives

- Differentiate the transversal solutions of the intelligent services layer and distinguish between the different groups of transversal solutions
- Deepening transversal solutions that integrate new ways of communication with the citizen or with the elements of the city
- Learn about transversal solutions that focus on the improvement of cross-cutting areas of the city such as mobility, urban planning and social policies
- Learn in depth about the transversal solutions that focus on the availability of information to different stakeholders of the city, the citizen, municipal managers, study and research centers, and the business and economic fabric
- Learn about the internal and external objects of the city, how they generate data and how they are integrated within a Smart City and the new urban planning systems by analyzing vulnerabilities and strengths and integrating all Smart City information systems

Join us and we will help you achieve professional excellence"

03

Course Management

In our university we have professionals specialized in each area of knowledge, who pour their work experience into our training programs. A multidisciplinary team with recognized prestige that has come together to offer you all their knowledge in this area.

Our university employs the best professionals in all areas who share their knowledge to help you"

Management

Mr. Garibi, Pedro

- Technical Electronic Engineer from the University of Deusto
- Telecommunications Engineer by the University of Deusto
- Master's Degree in Mobile Communication from the Polytechnic University of Madrid
- Professional with more than 20 years of experience in project management
- Solutions architect in the fields of Smart & Safe Cities, (Indra, Huawei, T-Systems)
- Manager of Smart City projects, both in the R&D and production areas
- Independent Smart Cities Consultant
- Co-chair of the United Nations U4SSC group for the elaboration of a framework for Artificial Intelligence in Smart Cities
- Speaker at several Smart Cities congresses in Spain and Europe
- Author of several articles on the use of intelligent platforms for the improvement of citizen security
- Member of the Official College of Telecommunication Engineers of Spain (COIT)

Professors

Mr. Budel, Richard

- Project management professional in the public sector
- Diploma in Medical Anthropology from Trent University (Canada)
- Managing Director of Simplicities Ltd
- Managing Partner of the Public Sector Department at Sullivan & Stanley
- Chairman of the Digital Government Advisory Board at Huawei
- Former Chief Information Officer (CIO/CTO) at IBM and Huawei
- Former IT Director, Department of Public Safety and Justice, Government of Ontario, Canada
- Thought leader and speaker at events in more than 70 countries around the world
- Collaborator in UN4SSC, EIP-SCC, Smart Cities Council and other multinational organizations

Mr. Bosch, Manuel

- Member of the Big Data and Artificial Intelligence Cluster of the Madrid City Council in the Interoperable Projects working group
- Graduate in Mining Engineering from the Polytechnic University of Madrid
- Consultant in Smart Cities and Nations, (Indra - Minsait)
- Expert in Smart Solutions in the fields of sustainability and circular economy
- Expert in the integration of eGovernment solutions in Smart Cities environments
- Extensive experience in Smart City projects
- Collaborator of the thematic group "City Platforms" of the U4SSC (United for Smart Sustainable Cities) initiative coordinated by ITU
- Author of several reports focused on the modernization of public administration through the use of new technologies

Ms. Domínguez, Fátima

- Consultant and area manager of Business Development for Public Administrations in the field of Smart Cities (Indra-Minsait)
- Degree in Civil Engineering from the Polytechnic University of Leiria (Portugal)
- ThePowerMba Business Expert - Business Management and Administration
- Responsible for the Caceres Smart Heritage Project
- Product owner of solutions for the intelligent management of tourist destinations
- Expert in smart solutions in the fields of agribusiness, urban services and tourism destination management

Mr. Koop, Sergio

- Expert in smart solutions in the fields of urban resilience, mobility, urban services and tourism destination management
- Degree in Industrial Technologies Engineering from Carlos III University of Madrid
- Master's Degree in Business Management from Carlos III University of Madrid
- More than 4 years of experience as a Smart Cities consultant (Indra - Minsait)
- Author of several reports focused on the use of disruptive technologies for the transformation of public administrations
- Collaborator of the S3 HIGH TECHFARMING group of the EU for the development of technologies to improve agricultural productivity

04

Structure and Content

The structure of the contents has been designed by leading professionals in the intelligent infrastructure sector, with extensive experience and recognized prestige in the profession, and aware of the benefits that the latest educational technology can bring to higher education.

We have the most complete and up-to-date academic program in the market. We strive for excellence and for you to achieve it too"

Module 1. Transversal Smart City Solutions

1.1. Transversal Solutions
- 1.1.1. Importance of Transversal Solutions
- 1.1.2. Smart Cities as a Guarantor of the Operation of Transversal Solutions

1.2. Citizen Card Solutions
- 1.2.1. Citizen Card
- 1.2.2. Solutions for the Integration of the Citizen Card in City Services

1.3. Internal and External City Objects
- 1.3.1. Internal City Objects
- 1.3.2. External City Objects
- 1.3.3. Integration of the Information of City Objects in the Smart City

1.4. Citizen Mobility Solutions
- 1.4.1. Mobility Beyond Private and Public Transportation
- 1.4.2. Mobility Management in the Smart City

1.5. New Urban Planning Systems
- 1.5.1. Functional Centrality Index
- 1.5.2. Analysis of Vulnerabilities and Strengths
- 1.5.3. Integration of Planning Systems in the Smart City

1.6. Inclusive Social Policy Planning
- 1.6.1. Complexity of Social Policies
- 1.6.2. The Use of Data for the Articulation of Social Policies
- 1.6.3. The Use of the Smart City for the Application of Social Policies

1.7. Empowering Innovation and the Local Ecosystem
- 1.7.1. The City Lab
- 1.7.2. The Creation of a Diverse Innovation Network
- 1.7.3. University-Business Collaboration

1.8. Open Data Portals and Marketplaces
- 1.8.1. Data Portals and their Importance in the Creation of the City Ecosystem
- 1.8.2. Open Data Portals
- 1.8.3. Marketplaces

1.9. The Citizen Portal and Citizen PPPs
- 1.9.1. Citizen Access to City Metrics
- 1.9.2. Citizen Portal Features
- 1.9.3. Features of the Citizen PPP

1.10. IOC: Holistic City Management
- 1.10.1. Holistic City Management Systems
- 1.10.2. Real-Time Operation and Supervision
- 1.10.3. Operation and Supervision in the Medium and Long Term

A comprehensive and multidisciplinary program that will allow you to excel in your career, following the latest advances in the field of smart city solutions"

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

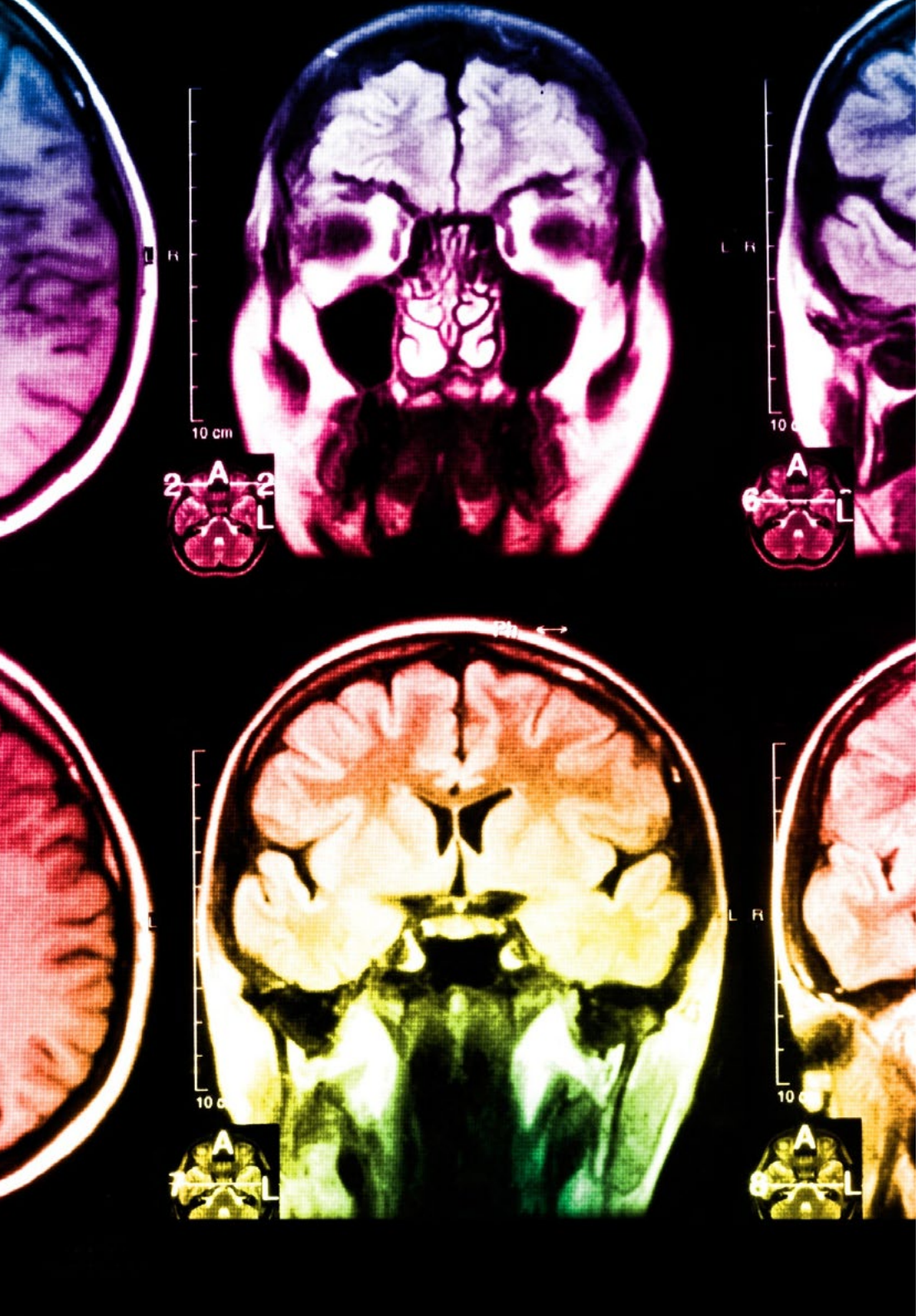
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

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.

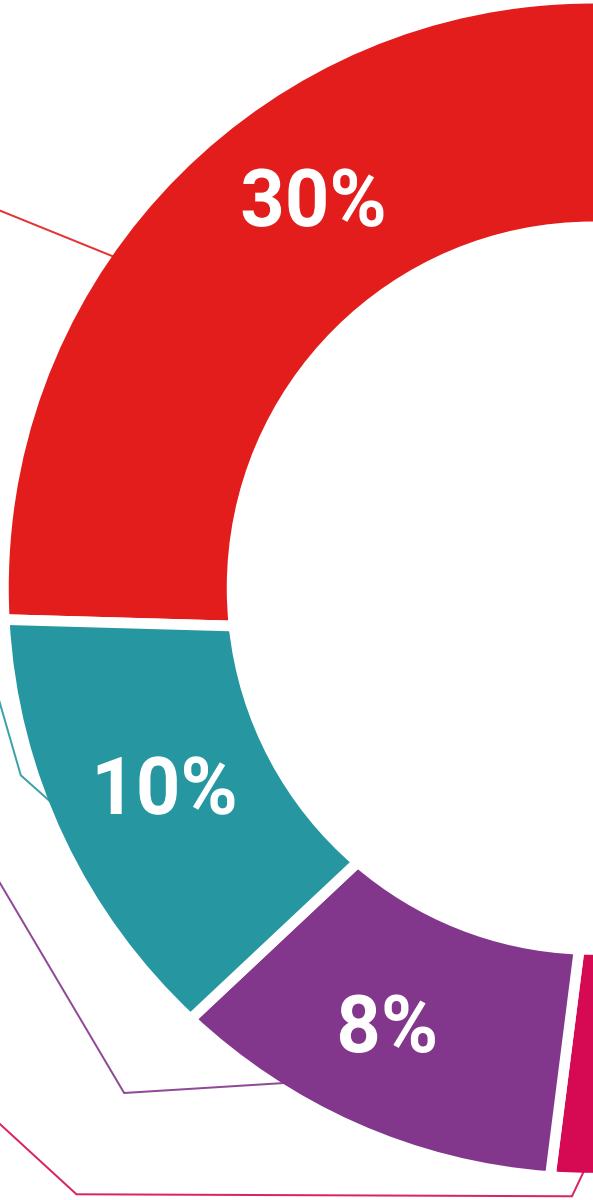
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

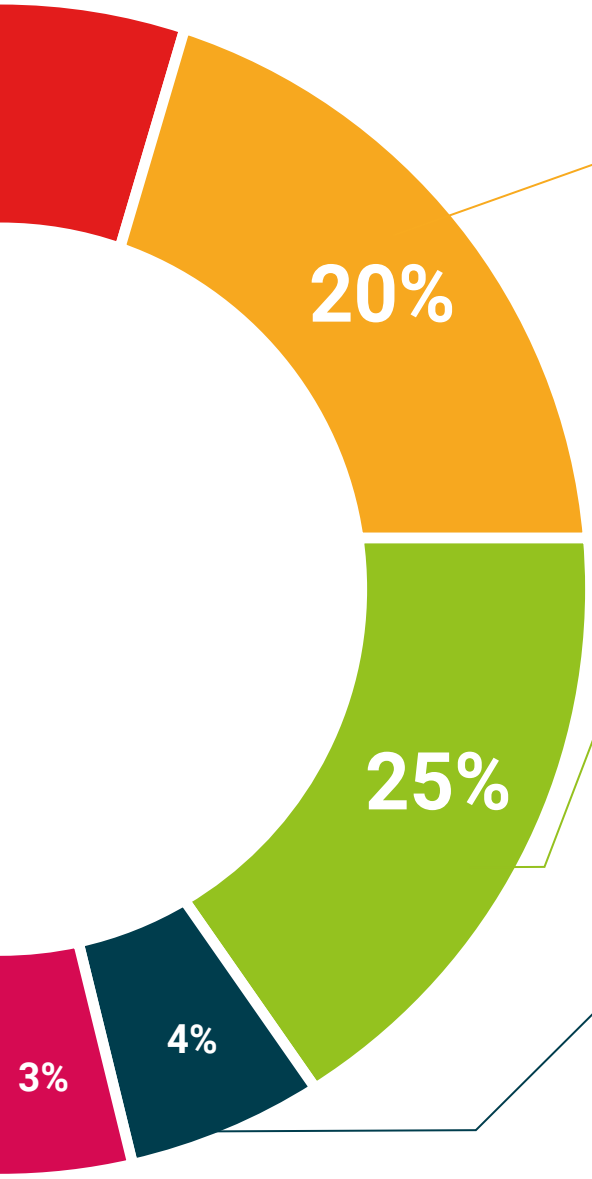
Practising Skills and Abilities

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 Transversal Smart City Solutions 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 Transversal Smart City Solutions** 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 Transversal Smart City Solutions**

Official Nº of Hours: **150 h.**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Awards the following

CERTIFICATE

to

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

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Transversal Smart City Solutions

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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