Postgraduate Certificate
Efficiency Indicator Systems in Sustainable Urban Infrastructures

tech global university

Postgraduate Certificate
Efficiency Indicator
Systems in Sustainable
Urban Infrastructures

- » Modality: **online**
- » Duration: **6 weeks**
- » Certificate: **TECH Global University**
- » Credits: **6 ECTS**
- » Schedule: **at your own pace**
- » Exams: **online**

Website: **www.techtitute.com/us/engineering/postgraduate-certificate/efficiency-indicator-systems-sustainable-urban-infrastructures**

Index

01
Introduction

The importance of measuring environmental and urban sustainability parameters to improve the quality of life in cities has gone from being an option to becoming a necessity. These indicators reveal problems to be solved and help to catalog whether the measures applied in urban spaces are truly sustainable, so knowing and managing these tools is essential. For this reason, this TECH program offers the necessary preparation for engineers to develop in this area and to lead the transition to resilient and healthy cities. And all with a flexible and 100% online methodology so that the students can set the deadlines for their learning.

"

This Postgraduate Certificate will improve your handling of measurement methods and technologies that help to perform good diagnostics in cities"

Cities must adjust their forms and functionalities to contribute to the correct management of territorial dynamics, the articulation of urban spaces, the increase of habitability in public spaces and the improvement of the quality of life of their citizens. This is the opinion of various entities and organizations related to urban infrastructures, which consider it necessary to use indicator systems for these purposes.

However, the monitoring and follow-up of indicators and technology applied to the management and planning of Sustainable Urban Infrastructures is a relatively new task. Previously, the improvement actions incorporated in all strategic plans had a follow-up over time, which led to the uncertainty of knowing, in advance, whether the sustainability and environmental objectives proposed in these plans would be achieved.

Thus, the Postgraduate Certificate in Efficiency Indicator Systems in Sustainable Urban Infrastructures proposes a comprehensive review of the different regulatory frameworks, measurement methods and technologies available to develop indicators that help to make a good diagnosis. It will also prepare students to monitor the actions of the plans over time, which is essential to improve decision-making in cities to contribute to the well-being of their citizens.

Thanks to a teaching team that is a reference in this field and a 100% online methodology, this program offers all the ingredients to excel in the sector. In addition, students will have access to a large digital library of resources from the beginning, 24 hours a day.

This **Postgraduate Certificate in Efficiency Indicator Systems in Sustainable Urban Infrastructures** contains the most complete and up-to-date program on the market. The most important features include:

- The development of practical cases presented by experts in Sustainable Urban Infrastructures
- The graphic, schematic and practical contents of the book provide technical and practical information on those disciplines that are essential for professional practice
- Practical exercises where self-assessment can be used to improve learning
- Its special emphasis on innovative methodologies
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Content that is accessible from any fixed or portable device with an Internet connection

Develop yourself in an in-demand area and lead the transition to resilient and healthy cities"

Manage your time in the Postgraduate Certificate at your convenience with all the flexibility you can imagine"

Specialize in an area in which public agencies and large private entities require professionals with updated knowledge.

Become with TECH a reference professional who manages the Efficiency Indicator Systems in large cities.

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.

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

The design of this program focuses on Problem-Based Learning, by means of which the professionals must try to solve the different professional practice situations that are presented throughout the academic course. For this purpose, the students will be assisted by an innovative interactive video system created by renowned experts.
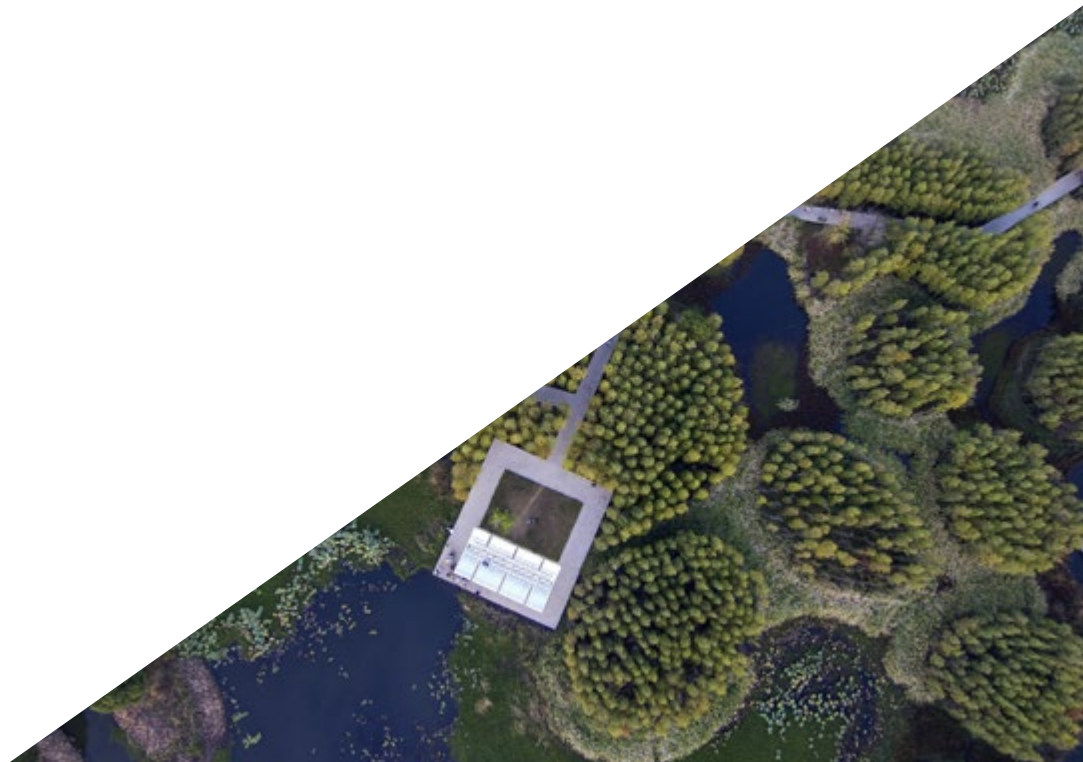
02

Objectives

This Postgraduate Certificate promotes the student's employability thanks to the latest knowledge in Efficiency Indicator Systems in Sustainable Urban Infrastructures. Thus, the program aims for students to be updated professionals in the Sustainable Urban Development of today's society and to handle new technologies for the development and monitoring of indicators, making appropriate diagnoses and determining those that best fit the objectives pursued.

The contents of this Postgraduate Certificate will bring you up to date in the use of new technologies for the development and monitoring of indicators"
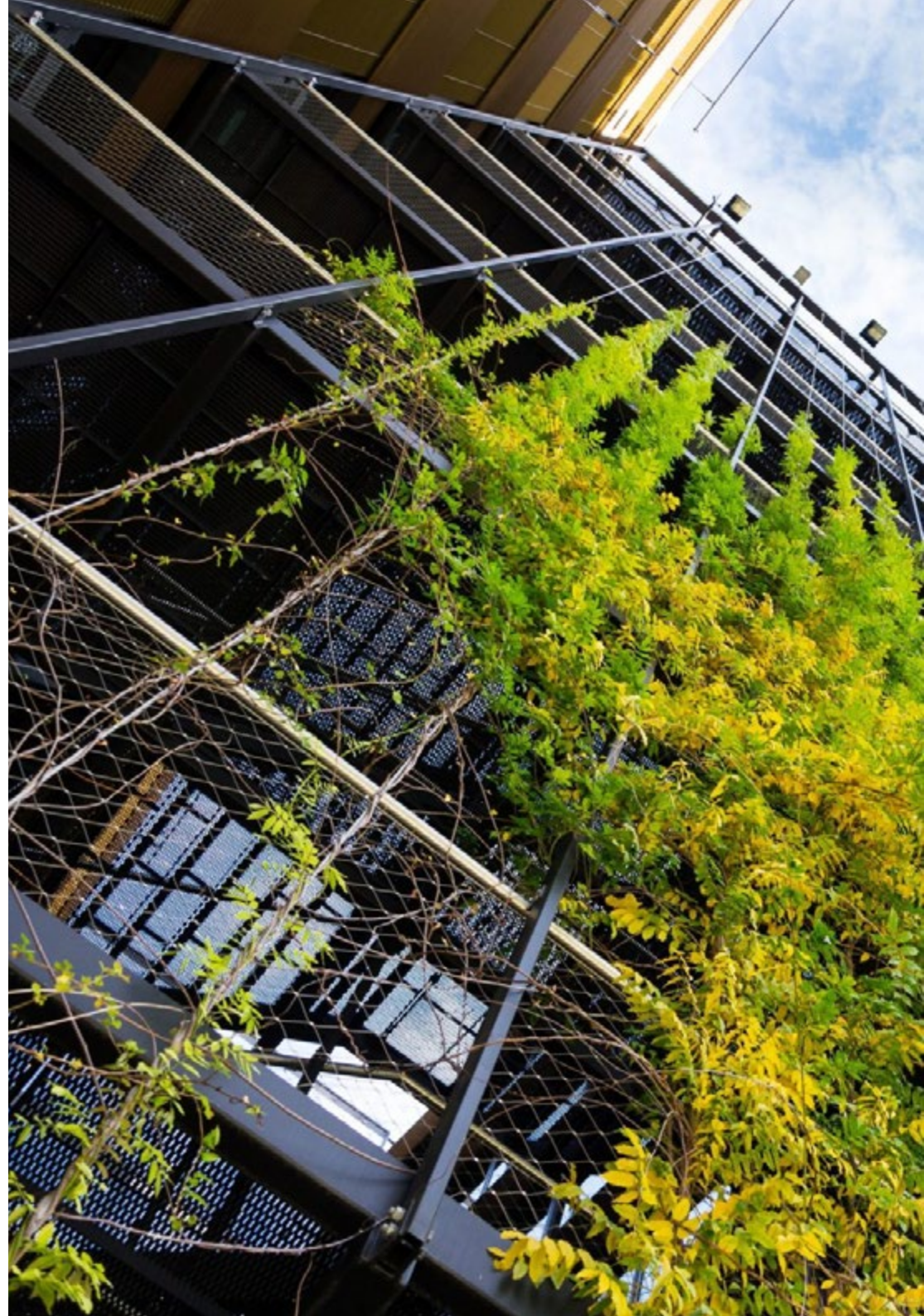
General Objectives

- Substantiate the current context of Sustainable Urban Development
- Analyze the main global reference strategies for Sustainable Urban Development
- Protecting and promoting Urban Biodiversity
- Communicate through visualization of good environmental management
- Analyze different nature-based solutions as city transformers

The best professionals on the Technologies for the elaboration and monitoring of indicators will help you to achieve your objectives"

Specific Objectives

- Generate specialized knowledge on technologies for the development and monitoring of indicators

- Establish strategies for prioritizing actions based on indicators

- Analyze environmental impacts on cities and the need to have objective data to improve them

- Determining the system of indicators best suited to the improvement objective being pursued

- Elaborate a good prior diagnosis based on indicators to be successful in the elaboration of strategic plans

- Examine the different categories of indicator groups

- Substantiate the Smart City as an example of technology incorporation for the improvement of quality of life

- Evaluate existing data visualization and analysis systems

- Analyze the potential of Earth Observation data for the generation of Urban Sustainability indicators

03
Course Management

In its aim to offer an education to students that achieves excellence, TECH has renowned professionals who stand out in the field of efficiency of Sustainable Urban Infrastructures. In this sense, the teaching team is specialized in the use of Environmental Big Data to facilitate decision-making in urban environments and belongs to the management of important companies in this field. A broad professional background that ensures the students the guarantees required to specialize internationally in a booming sector.

"

Succeed in your field thanks to prestigious teachers who are experts in Environmental Big Data and Smart Cities"

Management

D. Rodríguez Gamo, José Luis

- Business Development Director at Green Urban Data
- Senior sustainability consultant for large companies and public administrations
- Manager of the Urban and Environmental Services Division of Grupo Ferrovial
- Manager of Climate Change and Biodiversity of Grupo Ferrovial
- Forestry Engineer from the Polytechnic University of Madrid
- Specialization in Silvopastoral Farming
- Postgraduate degree in Conservation and Maintenance of Urban Green Zones from the Polytechnic University of Madrid
- Executive Management Program by the Instituto de Empresa

Professors

D. Carbonell Martínez, Alejandro

- ◆ CEO and Co-Founder of Green Urban Data
- ◆ CEO at CeroCeO2
- ◆ Co-creator of Effiencity
- ◆ Creative at ACM Arquitectura
- ◆ Member of the PiP program. Climate-KIC
- ◆ Architect in several architectural firms
- ◆ Degree in Architecture from the Polytechnic University of Valencia
- ◆ Specialization in Building
- ◆ Master's Degree in Business Management by CEEI
- ◆ Talent MBA at IEBS
- ◆ Degree in Management and Organization of Architectural Studios by CTAV

04
Structure and Content

The syllabus of this Postgraduate Certificate is articulated around the Relearninglearning method, combining maximum pedagogical rigor, academic demands and the latest educational technology. Thus, the key concepts of the program that are essential for the student's subsequent professional development are reiterated throughout the educational cycle until they have been fully assimilated. In this line, the contents deal with KPIs for monitoring Environmental Parameters, urban environmental quality management indicator systems, Smart Cities 2.0 or data collection for city planning, among other skills that are currently in great demand.

A syllabus developed by a top-notch teaching team with a method that ensures the complete assimilation of each of the contents of the Postgraduate Certificate"

Module 1. Monitoring and Tracking of Indicators and Technology Applied to Sustainable Urban

1.1.   Use of indicators (KPIs) for the monitoring of environmental parameters
   1.1.1.   KPIs as a tool for urban management
   1.1.2.   Public managers
   1.1.3.   Indicators Requirements
1.2.   Urban Environmental Quality Management Indicator Systems
   1.2.1.   Indicators for cities
   1.2.2.   SDG (Sustainable Development Goals) indicatorsSustainable Development Goals SDGs
   1.2.3.   Urban Agendas 2030
   1.2.4.   Other Indicator Systems
1.3.   The urban environment. Adaptation of Cities
   1.3.1.   Adaptation of Cities
   1.3.2.   Sectors concerned: Tourism, Insurance, Real Estate, Infrastructure
   1.3.3.   Solutions Based on Nature (SBN)
1.4.   Indicators and monitoring: categorization, frequency of collection, and quality of indicators
   1.4.1.   Categories of indicators
   1.4.2.   Recurrence of data collection
   1.4.3.   Resolution as a criterion for improving the quality of the indicator
1.5.   Technology for city planning: Data collection
   1.5.1.   Data: flour for the cake
   1.5.2.   Data sources for constructing environmental indicators
   1.5.3.   Dashboards for managing using KPIs
   1.5.4.   Technology for citizens as a tool for knowledge and transparency
1.6.   Technology for city planning: sustainable cities
   1.6.1.   Cartography (GIS)
   1.6.2.   Big Data
   1.6.3.   Machine Learning
   1.6.4.   Artificial Intelligence
   1.6.5.   Digital Twins

A program that contains all the keys to Sustainability in the heart of cities"

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.

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.

The student will learn to solve complex situations in real business environments through collaborative activities and real cases.

Relearning Methodology

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

We enhance the Case Study with the best 100% online teaching method: Relearning.

In 2019, we obtained the best learning results of all online universities in the world.

At TECH, you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our university is the only one in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically. 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.

30%

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.

10%

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.

8%

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.

20%

25%

4%

3%

Case Studies

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

Interactive Summaries

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

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

Testing & Retesting

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

06
Certificate

The Postgraduate Certificate in Efficiency Indicator Systems in Sustainable Urban Infrastructures guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.

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

This program will allow you to obtain your **Postgraduate Certificate in Efficiency Indicator Systems in Sustainable Urban Infrastructures** 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** title 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: **Postgraduate Certificate in Efficiency Indicator Systems in Sustainable Urban Infrastructures**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**

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

Postgraduate Certificate in Efficiency Indicator Systems in Sustainable Urban Infrastructures

This is a program of 180 hours of duration equivalent to 6 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
Rector

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

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