

# Postgraduate Certificate Bioclimatic Architecture



## Postgraduate Certificate Bioclimatic Architecture

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

Website: [www.techtitute.com/us/engineering/postgraduate-certificate/bioclimate-architecture](http://www.techtitute.com/us/engineering/postgraduate-certificate/bioclimate-architecture)

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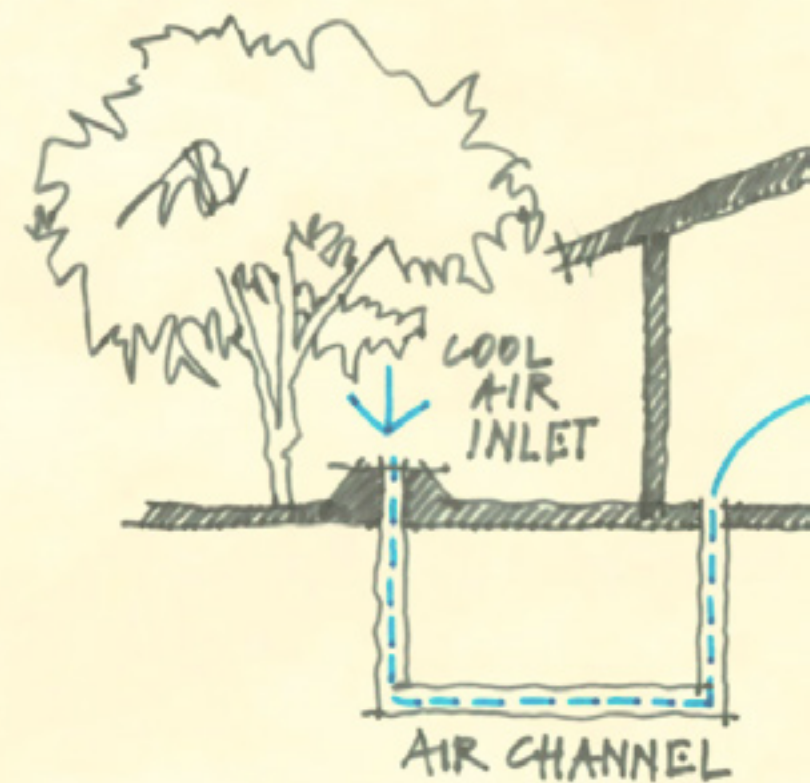
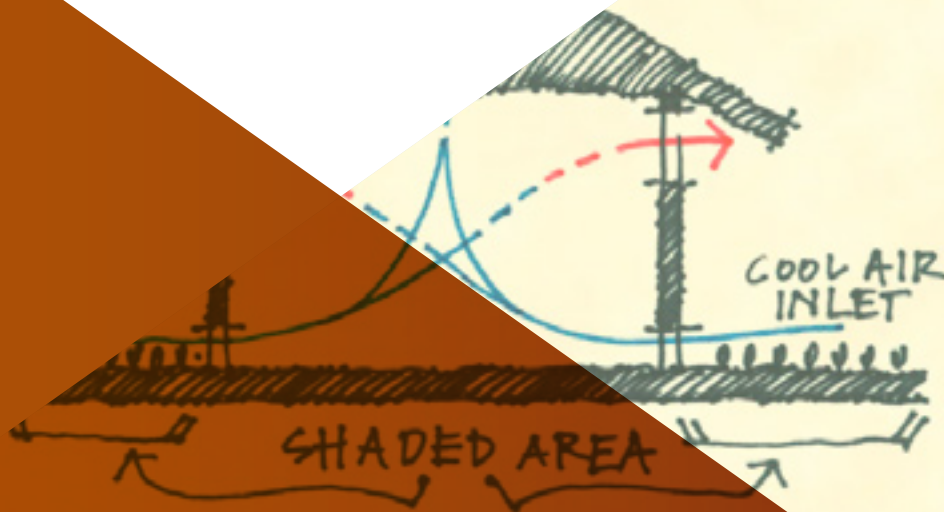
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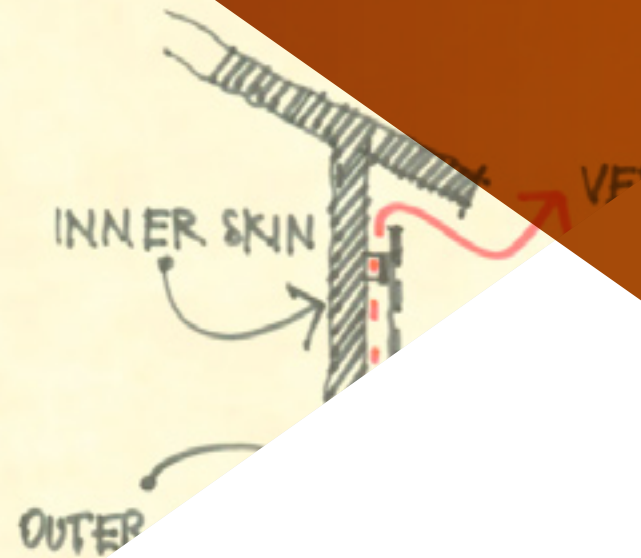
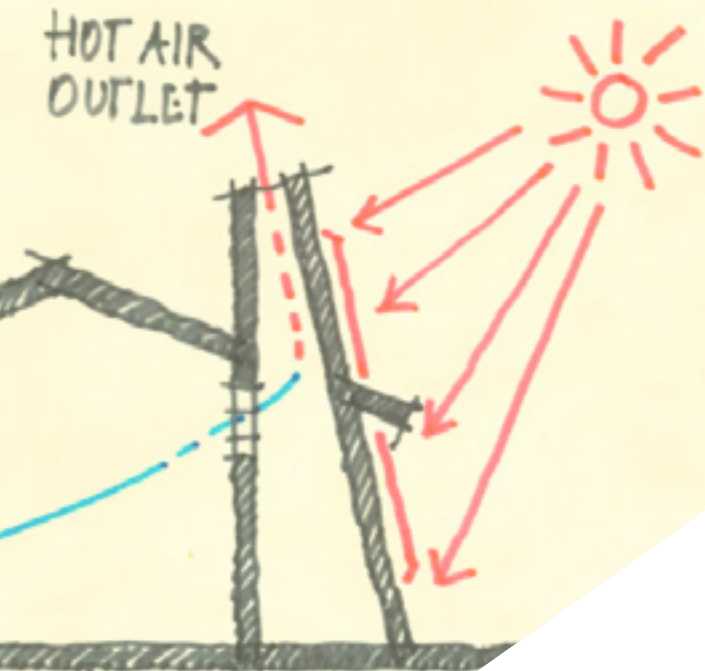
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01

# Introduction

Learn how to design buildings, taking into account climatic conditions, taking advantage of available natural resources, in order to reduce environmental impacts and therefore reduce energy consumption. With this complete program you will develop your skills and knowledge in Bioclimatic Architecture, with the help of professionals in the sector





“Engineering professionals must continue their training during their career to adapt to new developments in the field”

The Postgraduate Certificate in Bioclimatic Architecture addresses the complete range of issues involved in this field, both in the residential and tertiary sectors. Its study has a clear advantage over other programs that focus on specific blocks, which prevents the student from knowing the interrelationship with other areas included in the multidisciplinary field of Bioclimatic Architecture

Throughout these months of specialization, you will learn to study those structural components that allow the use of sunlight and other natural resources and their architectural adaptation, you will also be able to detect the relationship of a building with human health

By completing and passing the assessments of this educational program, the student will obtain a solid knowledge of the Bioclimatic Architecture

As this is a 100% online Postgraduate Certificate, the students are not constrained by fixed timetables or the need to move to another physical location, but can access the contents at any time of the day, balancing their professional or personal life with their academic life

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

- ◆ The development of practical cases presented by experts in Bioclimatic Architecture
- ◆ The graphic, schematic, and practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional development
- ◆ Practical exercises where the self-assessment process can be carried out to improve learning
- ◆ Its special emphasis on innovative methodologies in Bioclimatic Architecture
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection work
- ◆ Content that is accessible from any fixed or portable device with an Internet connection

“Do not miss the opportunity to take with us this Postgraduate Certificate in Bioclimatic Architecture. It's the perfect opportunity to advance your career”

“*This Postgraduate Certificate is the best investment you can make when selecting a refresher program to update your knowledge in Bioclimatic Architecture*”

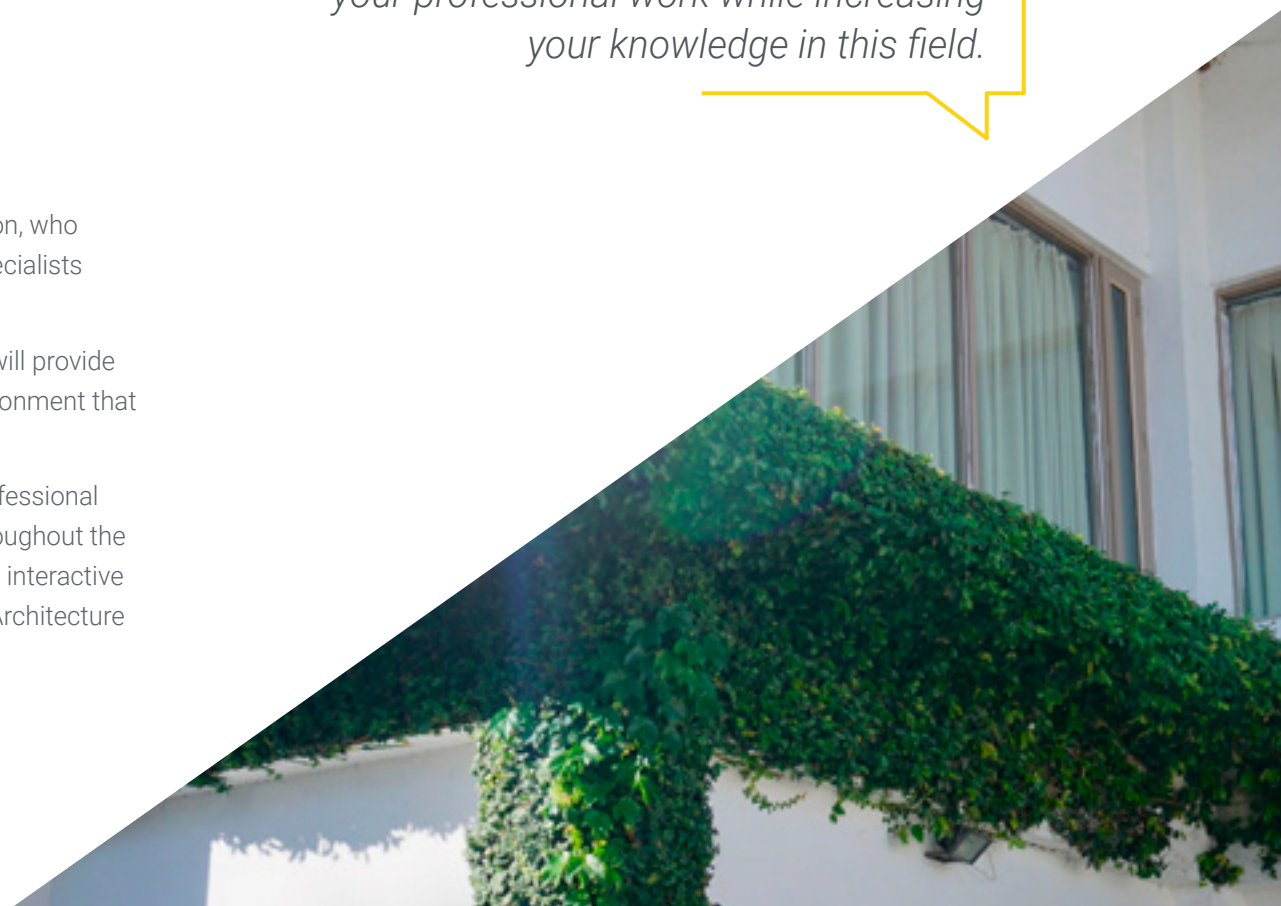
*This training comes with the best teaching material, providing you with a contextual approach that will facilitate your learning.*

*This 100% online Postgraduate Certificate will allow you to balance your studies with your professional work while increasing your knowledge in this field.*

Its teaching staff includes professionals belonging to the field of construction, who bring to this program the experience of their work, as well as recognized specialists from leading companies 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 training 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. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts in Bioclimatic Architecture



# 02

# Objectives

The Postgraduate Certificate in Bioclimatic Architecture is oriented to facilitate the performance of the professional in this field to acquire and know the main developments in this field of engineering







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*Our goal is to train you to be the best in your profession and for this we count on the quality of our teachers and subjects"*



## General Objectives

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- ◆ Choose the most efficient equipment and detect deficiencies in the electrical installation to reduce consumption, optimize installations and establish a culture of energy efficiency in the organization. As well as the design of electric vehicle charging point infrastructures for their implementation in buildings
- ◆ Delve into the different cooling and heating generation systems most commonly used today
- ◆ Perform a complete analysis of the main maintenance operations of air conditioning equipment, its cleaning and replacement of parts
- ◆ In-depth breakdown of the properties of light involved in building energy savings
- ◆ Master and apply the techniques and requirements for the design and calculation of lighting systems, seeking to comply with health, visual and energy criteria
- ◆ Delve into and analyze the different control systems installed in buildings, the differences between them, the applicability criteria in each case and the energy savings provided





## Specific Objectives

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- ◆ Gain exhaustive knowledge of the structural elements and their effect on building energy efficiency
- ◆ Study structural components that allow the use of sunlight and other natural resources and their architectural adaptation
- ◆ Detect the connection between buildings and human health

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*Take the step to get up to date  
on the latest developments in  
Bioclimatic Architecture”*

03

# Course Management

In our university we have professionals specialized in each area of knowledge, who bring their work experience into our training programs



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

## International Guest Director

Stefano Silvani is a proven leader in digital transformation, with more than 10 years of experience driving technology innovations in areas such as cloud, IoT, Artificial Intelligence, Machine Learning (AI/ML), Software as a Service (SaaS) and Platform as a Service (PaaS) solutions. As such, his background includes a strategic focus on transforming business models and negotiating large-scale enterprise deals. In addition, his interests encompass value creation through technology, the development of new digital solutions and leadership implementation.

He has also worked in world-renowned companies such as General Electric Digital, where he played a crucial role in the launch of Predix, the first industrial IoT platform in the market. He has also joined Siemens Digital Industries, where he has led the expansion of the Mindsphere platform and the code development platform under Mendix. In this sense, his career has continued at Siemens Smart Infrastructure, where he has led the global pre-sales team for the intelligent building platform Building X, generating advanced technology solutions for global companies.

In addition to his professional work, he has been an active speaker on topics of digital innovation, value co-creation and leadership. With experience in several countries, such as Italy, Spain, Luxembourg and Switzerland, he has brought a global perspective to his projects, exploring new ways to drive business and technological innovation worldwide.

He has also been recognized for his ability to lead digital transformations in complex organizations. In fact, his team has generated \$70 million in annual revenue, offering consulting services in intelligent buildings and architectural governance solutions. And it is his focus on cross-functional collaboration and his ability to manage global teams that have positioned him as a trusted advisor to senior executives.



## Mr. Silvani, Stefano

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- Global Head of Pre-Sales at Siemens, Zurich, Switzerland
- Global Pre-Sales - Smart Buildings at Siemens
- Presales Predix - EMEA at GE Digital
- Commercial Contracts and Partnership Management Officer at Menarini
- International Operations Luxemburg SA
- Master's Degree in Economics and Management at the University Di Roma Tor Vergata
- Master's Degree in Computer Engineering and Big Data at the University
- Telematica Internazionale

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*Thanks to TECH, you will be able to learn with the best professionals in the world”*

## Management



### Mr. Nieto-Sandoval González- Nicolás, David

- ♦ Industrial Technical Engineer by the E.U.P. of Málaga.
- ♦ Industrial Engineer from E.T.S.I.I.
- ♦ Master's Degree in Integral Management of Quality, Environment and Health and Safety at Work from the University of the Balearic Islands
- ♦ He has been working for more than 11 years, both for companies and independently, for clients in the private agri-food industrial sector and the institutional sector, as a consultant in engineering, project manager, energy saving and circularity in organizations
- ♦ Professor certified by the EOI in the areas of industry, entrepreneurship, human resources, energy, new technologies and technological innovation
- ♦ Trainer for the European INDUCE project
- ♦ Trainer at institutions such as COGITI or COIIM

## Professors

### Ms. Peña Serrano, Ana Belén

- ♦ Technical Engineer in Topography from the Polytechnic University of Madrid
- ♦ Master's Degree in Renewable Energies from San Pablo CEU University
- ♦ Postgraduate Certificate in Geological Cartography from Universidad Nacional de Educación a Distancia (National University of Distance Education)
- ♦ Postgraduate Certificate in Building Energy Certification from Fundación Laboral de la Construcción
- ♦ Her experience covers several sectors from working on site, to managing people in human resources
- ♦ She collaborates in different scientific communication projects, directing the dissemination in different media in the field of energy

- ♦ Member of the work management team for the Master's Degree in Environmental and Energy Management in Organizations at the International University of La Rioja

### Mr. González Cano, José Luis

- ♦ Degree in Optics and Optometry from the Complutense University of Madrid
- ♦ Lighting Designer He collaborates with companies in the lighting sector in consulting, training, lighting technology projects and implementation of ISO 9001:2015 quality systems (internal auditor)
- ♦ He is a teacher for Vocational Training in electronic systems, telematics (CISCO certified instructor), radio communications, IoT
- ♦ Member of the Professional Association of Lighting Designers (Technical Consultant) and member of the Spanish Lighting Committee, who participates in working groups on LED technology





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*Train in the world's leading  
private online university"*

04

# Structure and Content

The structure of the contents has been designed by the best professionals in the sector, with extensive experience and recognized prestige in the profession





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*We have the most complete and up-to-date program on the market. We strive for excellence and for you to achieve it too”*

## Module 1. Bioclimatic Architecture

- 1.1. Materials Technology and Construction Systems
  - 1.1.1. Bioclimatic Architecture Evolution
  - 1.1.2. Most Used Materials
  - 1.1.3. Constructive Systems
  - 1.1.4. Thermal Bridges
- 1.2. Enclosures, Walls and Roofs
  - 1.2.1. The Role of Enclosures in Energy Efficiency
  - 1.2.2. Vertical Enclosures and Materials Used
  - 1.2.3. Horizontal Enclosures and Materials Used
  - 1.2.4. Flat Roofs
  - 1.2.5. Sloping Roofs
- 1.3. Openings, Glazing and Frames
  - 1.3.1. Types of Openings
  - 1.3.2. The Role of Openings in Energy Efficiency
  - 1.3.3. Materials Used
- 1.4. Solar Protection
  - 1.4.1. Need for Solar Protection
  - 1.4.2. Solar Protection Systems
  - 1.4.3. Awnings
  - 1.4.4. Slats
  - 1.4.5. Overhangs
  - 1.4.6. Setbacks
  - 1.4.7. Other Protection Systems
- 1.5. Bioclimatic Strategy in Summer
  - 1.5.1. The Importance of Utilizing Shade
  - 1.5.2. Bioclimatic Construction Techniques for Summer
  - 1.5.3. Good Building Practices

- 1.6. Bioclimatic Strategy for Winter
  - 1.6.1. The Importance the Utilizing the Sun
  - 1.6.2. Bioclimatic Construction Techniques for Winter
  - 1.6.3. Construction Examples
- 1.7. Canadian Wells. Trombe Wall. Vegetable Covers
  - 1.7.1. Other Forms of Energy Utilization
  - 1.7.2. Canadian Wells
  - 1.7.3. Trombe Wall
  - 1.7.4. Vegetable Covers
- 1.8. The Importance of Building Orientation
  - 1.8.1. The Wind Rose
  - 1.8.2. Building Orientations
  - 1.8.3. Examples of Bad Practices
- 1.9. Healthy Buildings
  - 1.9.1. Air Quality
  - 1.9.2. Lighting Quality
  - 1.9.3. Thermal Insulation
  - 1.9.4. Acoustic Insulation
  - 1.9.5. Sick Building Syndrome
- 1.10. Bioclimatic Architecture Examples
  - 1.10.1. International Architecture
  - 1.10.2. Bioclimatic Architecture



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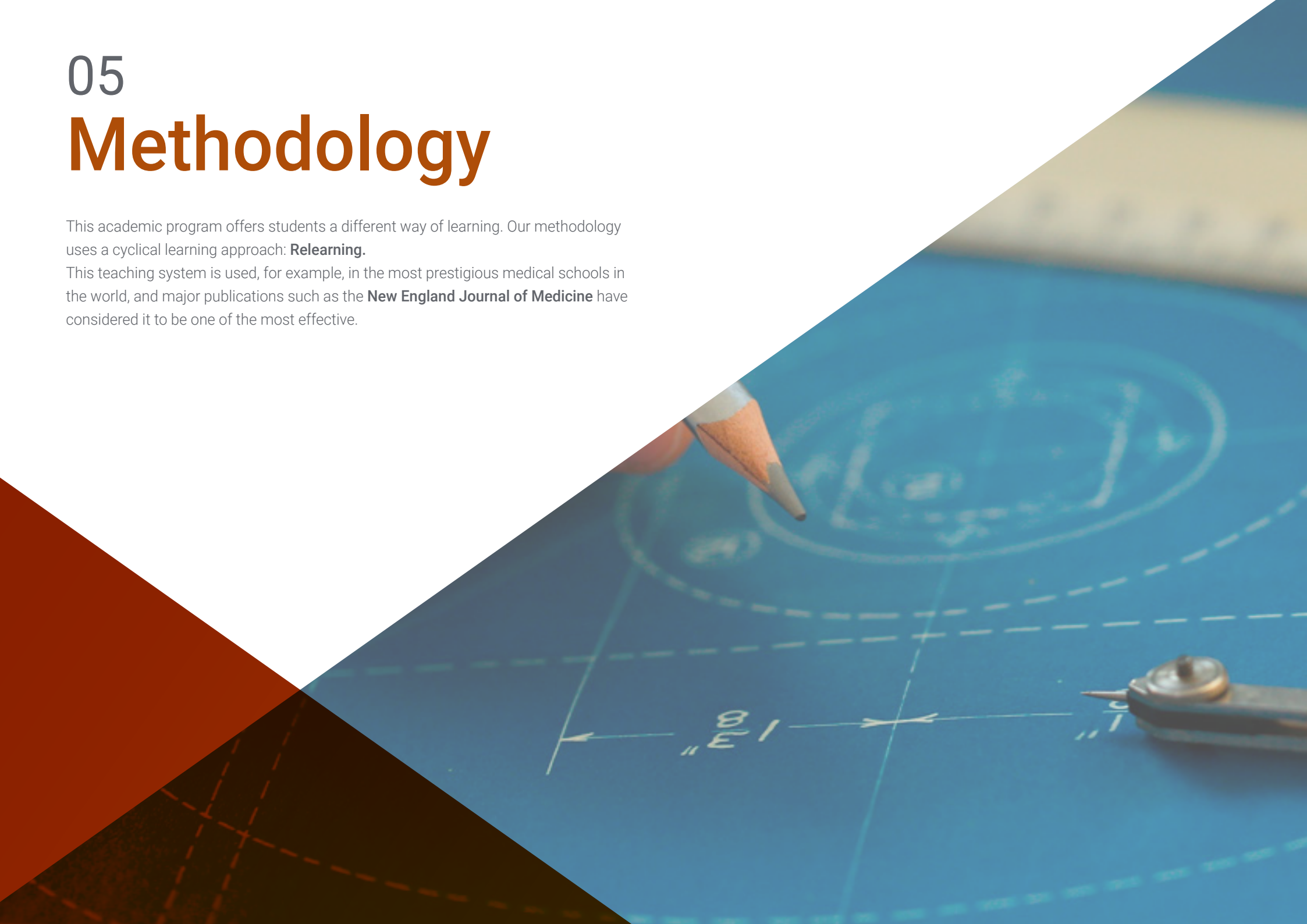
*This program will allow you  
to advance in your career  
comfortably”*

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

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

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

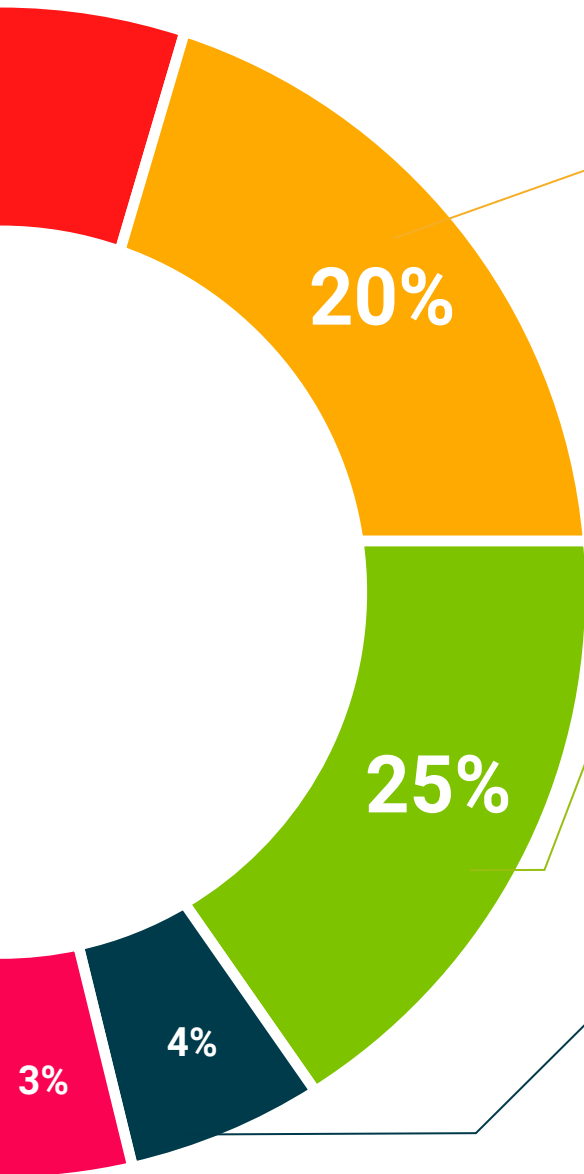
They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



### 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 Bioclimatic Architecture guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University



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

This **Postgraduate Certificate in Bioclimatic Architecture** 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 diploma 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 Bioclimatic Architecture**

Official N° of Hours: **150 h.**



\*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.



future  
health confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present  
development language  
classroom



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