Postgraduate Certificate
Building Energy Simulation Tools and Regulations

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Postgraduate Certificate
Building Energy Simulation Tools and Regulations

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

Website: **www.techtitute.com/in/engineering/postgraduate-certificate/building-energy-simulation-tools-and-regulations**

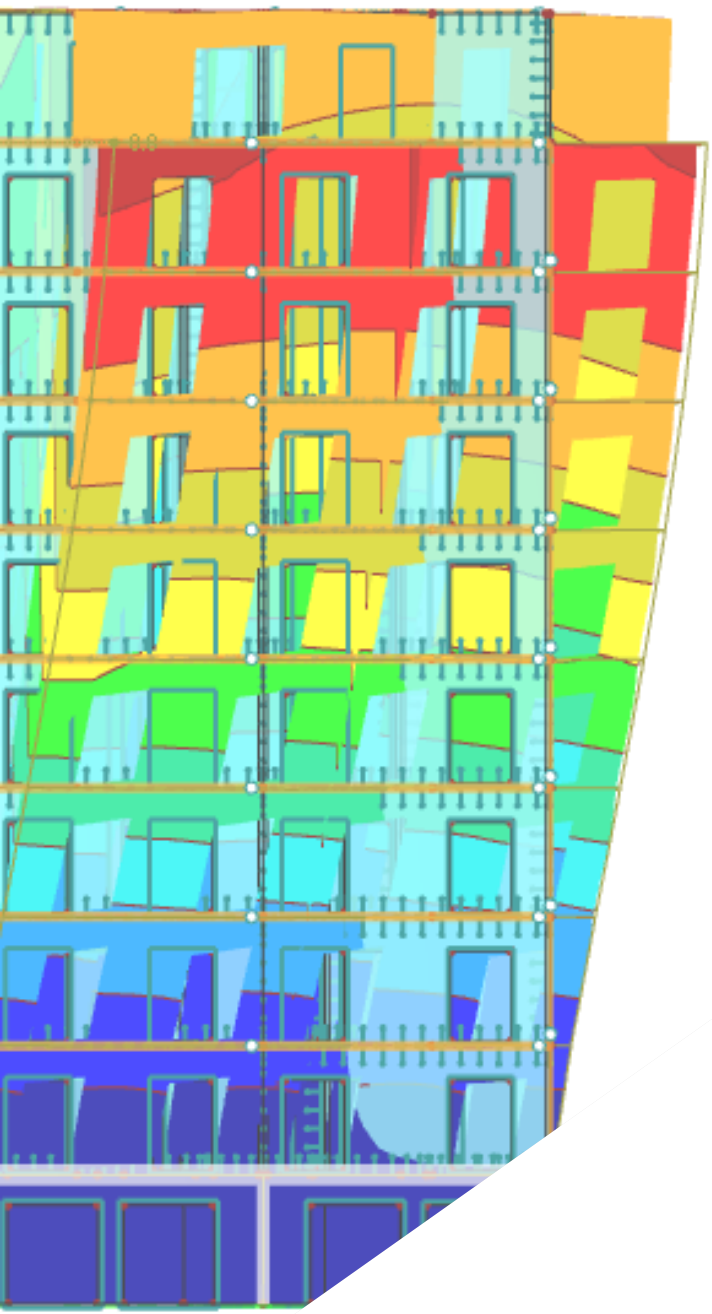
Index

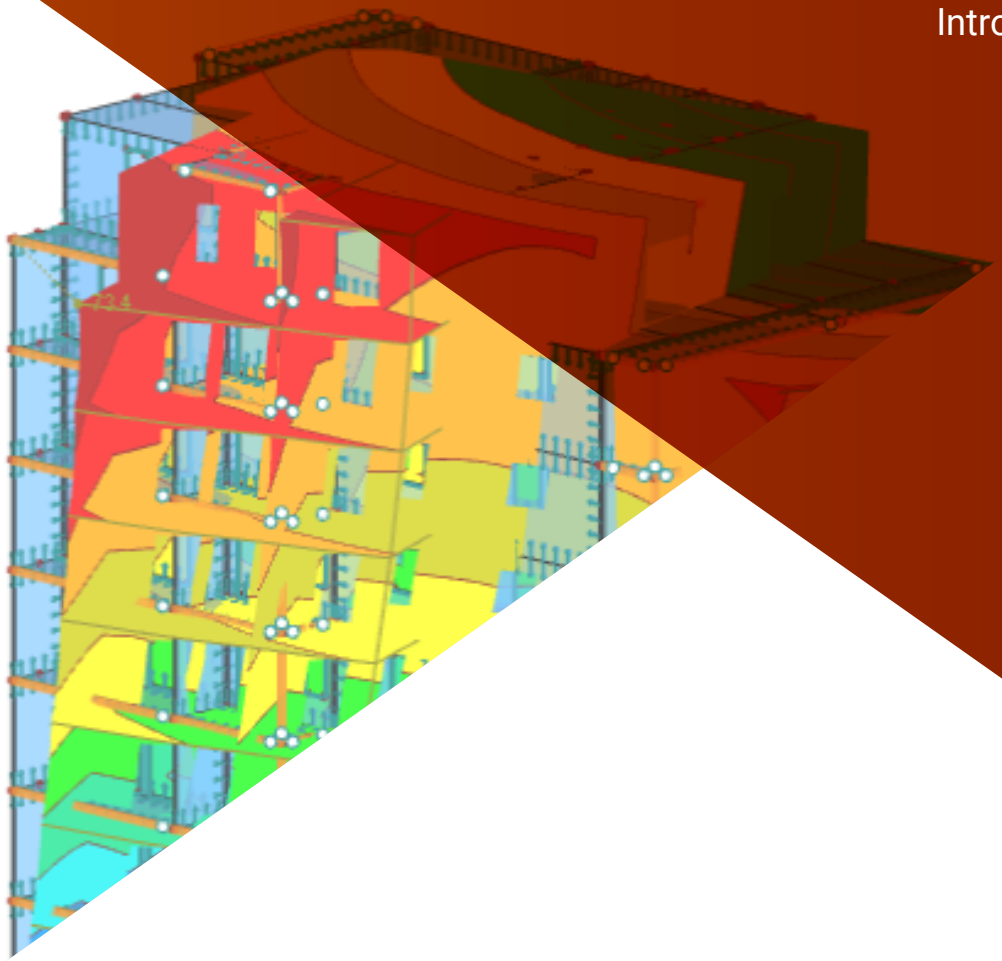
01

Introduction

In this complete Postgraduate Certificate exposes the current situation in the building related to the new Technical Building Code, CTE 2019 as well as a description of the most important changes brought before the previous regulation, CTE 2013.

A high quality proposal aimed at the most demanding professionals in the sector.





Acquire the most advanced and up-to-date knowledge in the field of Building Energy Simulation Tools and Regulations with a highly qualified expert and training impact"

The different current approved programs for energy certification of buildings will be presented, such as: the Lider-Calener HULC Unified Tool, the CE3X program, the CE3 program, the CERMA program, the CYPETHERM program as well as the SG SAVE program.

We will carry out a detailed example of energy certification with simplified procedure with the C3X program of an Existing Building analyzing the evaluation methodology, the introduction of the site and its conditions of use, the description of the envelope and the systems and installations and the analysis of the resulting energy consumption.

We will finish with an example of energy certification with the Lider-Calener Unified Tool of a New Building analyzing the evaluation methodology, the introduction of the site and its conditions of use, the description of the envelope and the systems and installations and the analysis of the resulting energy consumption.

Join the elite, with this highly effective training training and open new paths to help you advance in your professional progress"

This **Postgraduate Certificate in Building Energy Simulation** Tools and Regulations contains the most complete and up-to-date program on the market. The most important features include:

- Latest technology in online teaching software
- Highly visual teaching system, supported by graphic and schematic contents that are easy to assimilate and understand
- Practical cases presented by practising experts.
- State-of-the-art interactive video systems
- Teaching supported by telepractice
- Continuous updating and recycling systems
- Self-regulating learning: full compatibility with other occupations
- Practical exercises for self-evaluation and learning verification
- Support groups and educational synergies: questions to the expert, debate and knowledge forums
- Communication with the teacher and individual reflection work
- Content that is accessible from any fixed or portable device with an Internet connection.
- internet connection
- Supplementary documentation databases that are permanently available, even after the course has concluded

With the experience of active professionals and the analysis of real cases of success in the application and use of energy saving systems in buildings"

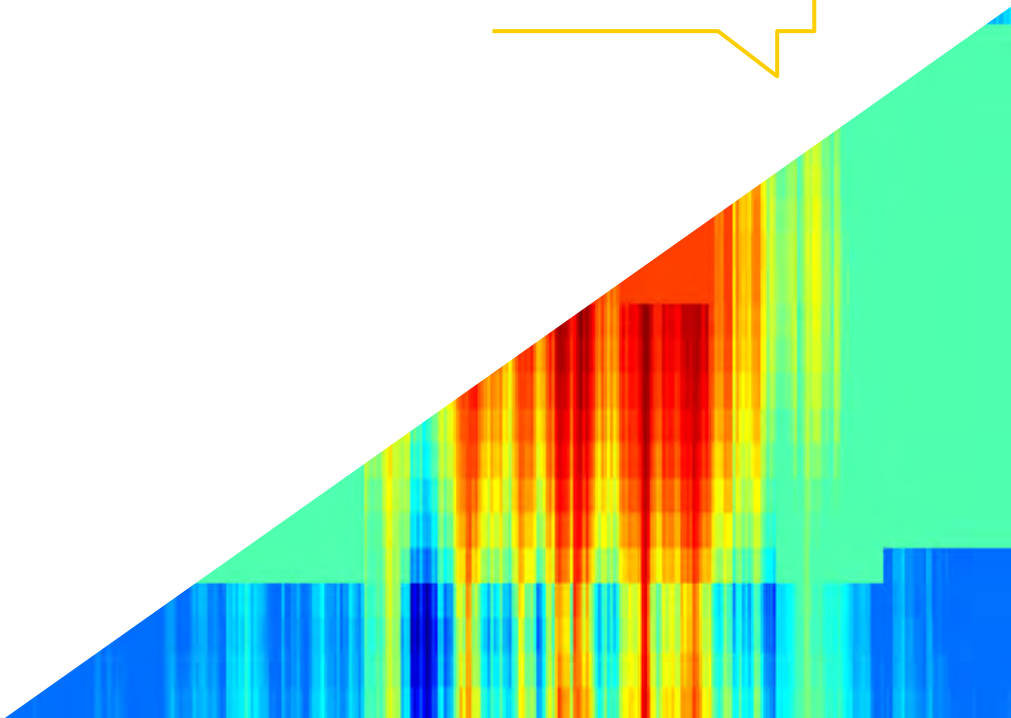
Our teaching staff is made up of professionals from different fields related to this specialty. In this way, we ensure that we provide you with the educational update we are aiming for. A multidisciplinary team of professionals trained and experienced in different environments, who will develop the theoretical knowledge in an efficient way, but above all, they will bring their practical knowledge from their own experience to the course: one of the differential qualities of this training.

This mastery of the subject matter is complemented by the effectiveness of the methodological design. Developed by a multidisciplinary team of e-learning experts, it integrates the latest advances in educational technology. This way, you will be able to study with a range of comfortable and versatile multimedia tools that will give you the operability you need in your training.

The design of this program is based on Problem-Based Learning: an approach that conceives learning as a highly practical process. To achieve this remotely, we will use **telepractice**: With the help of an innovative interactive video system and **Learning from an Expert**, you will be able to acquire the knowledge as if you were facing the scenario you are currently learning. A concept that will allow you to integrate and fix learning in a more realistic and permanent way.

With a methodological design based on proven teaching techniques, this innovative course will take you through different teaching approaches to allow you to learn in a dynamic and effective way.

Our innovative telepractice concept will give you the opportunity to learn through an immersive experience, which will provide you with a faster integration and a much more realistic view of the contents: "learning from an expert.



02

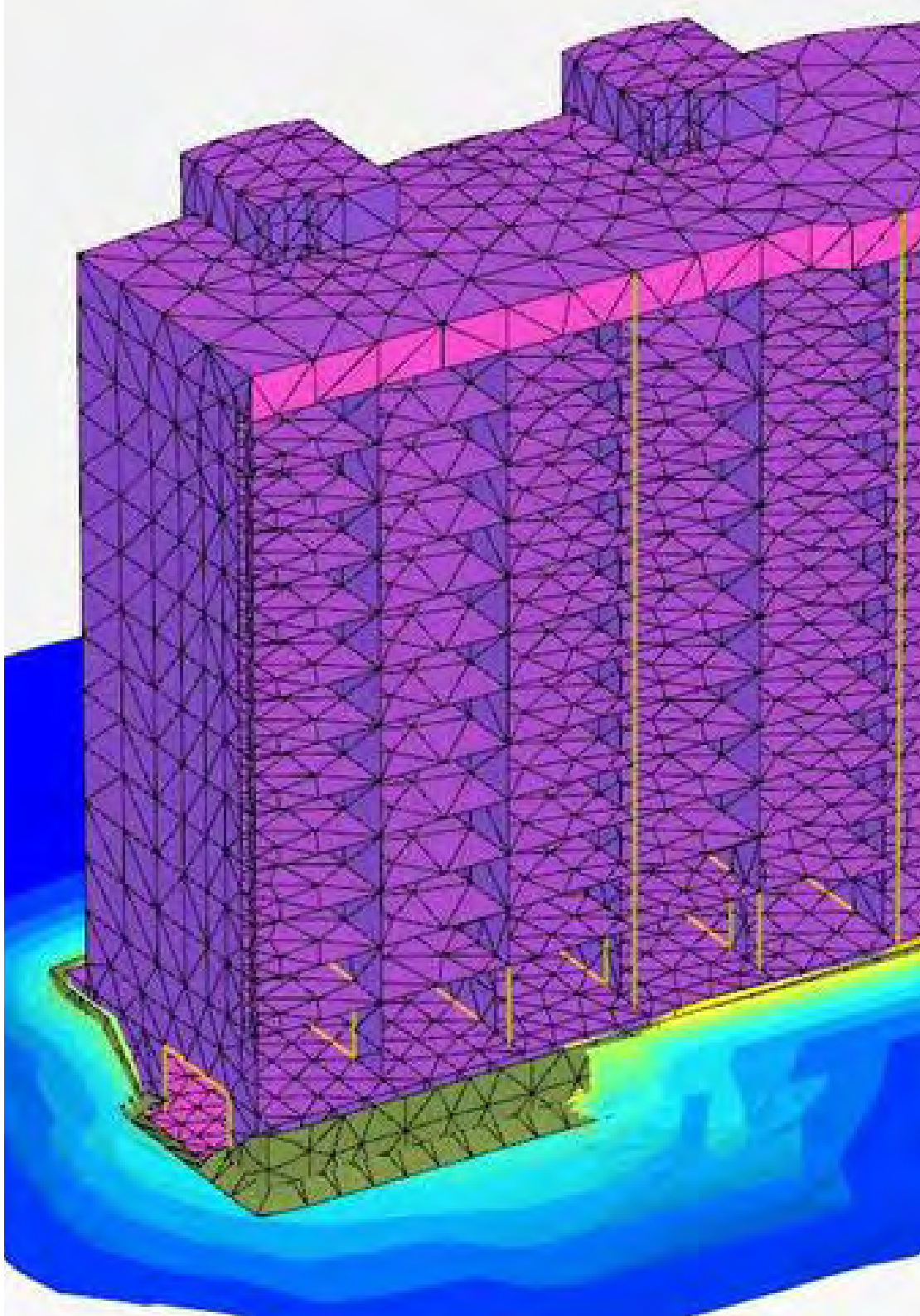
Objectives

Our objective is to train highly qualified professionals for work experience. An objective that is complemented, moreover, in a global manner, by promoting human development that lays the foundations for a better society. This objective is materialized in helping professionals to reach a much higher level of competence and control. A goal that, in just a few months you will be able to achieve, with a high intensity and effective training.

If your objective is to broaden your skills set to include new paths of success and development, this is the course for you a training that aspires to excellence"

General Objectives

- Undertake the particularities to correctly manage the design, project, construction and execution of Energy Rehabilitation Works (Existing Buildings) and Energy Saving (New Buildings)
- Interpret the current regulatory framework based on current regulations and the possible criteria to be implemented for energy efficiency in buildings
- Discover the potential business opportunities offered by the knowledge of the various energy efficiency measures, from studying tenders and technical tenders for construction contracts, projecting buildings, analyzing and directing the works, managing, coordinating and planning the development of Energy Saving and Rehabilitation Projects
- Ability to analyze Building Maintenance programs developing the study of appropriate Energy Saving measures to be implemented according to the technical requirements
- Delve into the latest trends, technologies and techniques in the field of Energy Efficiency in Buildings



Specific Objectives

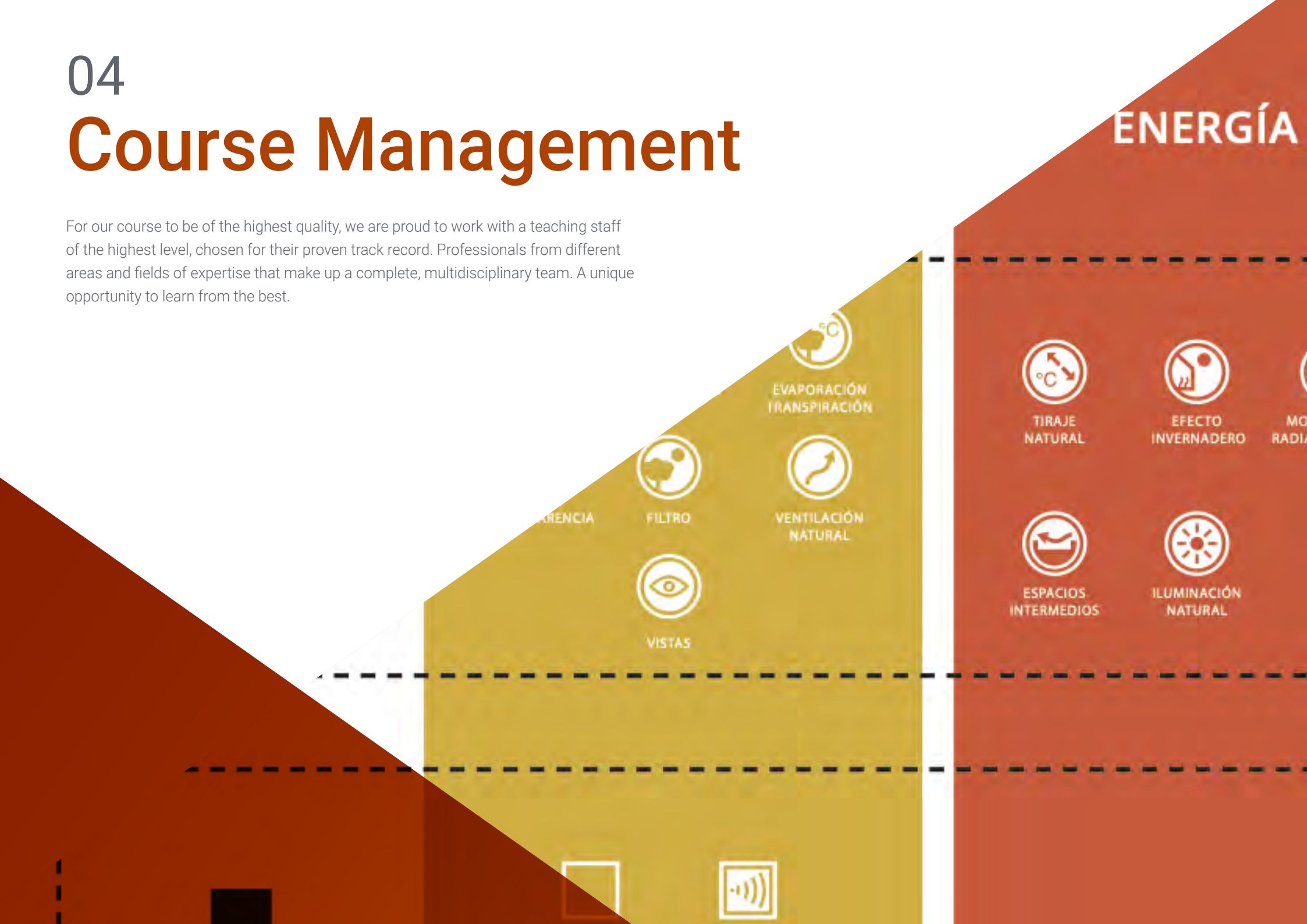
- Interpret the legislative framework applicable to the energy certification of buildings
- Learn about the proposed regulatory changes in energy matters within the framework of the Technical Building Code CTE 2019 compared to the previous CTE 2013
- Analyze the different valid tools for the energy certification of buildings, whether it is the Lider-Calener Unified Tools, the C3X Energy Certification program, the C3 Energy Certification program, the CERMA Energy Certification program, the CYPETHERM 2020 Energy Certification program, the SG SAVE Energy Certification program
- Integrate the fundamental knowledge of the development of an Energy Certification of an existing building by the Simplified Procedure using the C3X program and of a new building using the Unified Lider-Calener tool

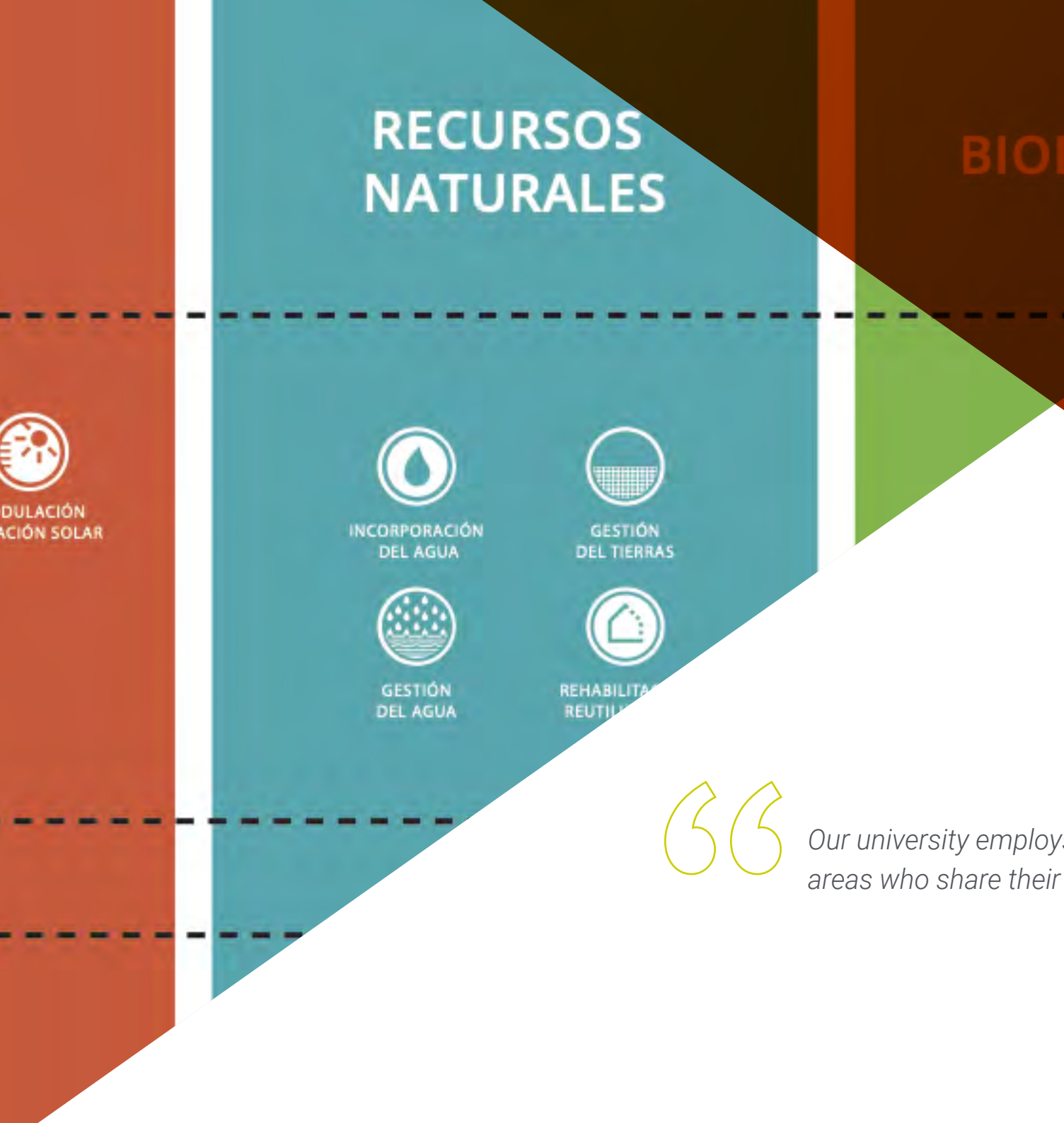
A path to achieve specialization and professional growth that will propel you towards a greater level of competitiveness in the employment market"

04

Course Management

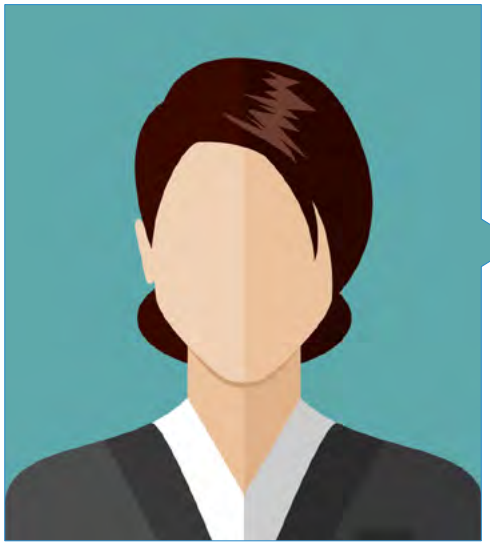
For our course to be of the highest quality, we are proud to work with a teaching staff of the highest level, chosen for their proven track record. Professionals from different areas and fields of expertise that make up a complete, multidisciplinary team. A unique opportunity to learn from the best.





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

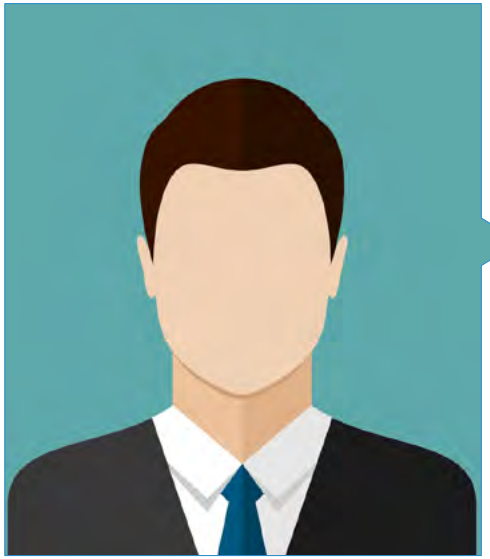
Management



Ms. Dombriz Martialay, Talia

- Architect by the Universidad Politécnica de Madrid 1999 (ETSAM), with an A in her PFC, she holds the LEED® AP BD+C program from the U.S. Green Building Council (USGBC), and the LEED® AP BD+C program from the U.S. Green Building Council (USGBC). Green Building Council (USGBC)
- BREEAM® ES assessor by the Building Research Establishment (BRE) and WELL™ AP by the International WELL Building Institute (IWBI) and PASSIVHAUS building expert
- Her professional activity is developed as Project Director of DMDV Architects, specialists in Nearly Zero or Zero Energy Efficiency Buildings (nZEB) under the PASSIVHAUS standard, and she is also co-founder of CENERGETICA, a sustainability consultancy in international LEED, BREEAM and WELL certifications. In her professional practice curriculum she has multiple national and international consultancies for LEED, BREEAM and WELL certifications, as well as PASSIVHAUS. DMDV Architects are simultaneously developing multiple projects with sustainability certification in all areas for both private and public administration clients.. He has participated in several congresses related to passive and nearly zero consumption construction and design and is the author of articles on the same subject

Codirector



Mr. Diedrich Valero, Daniel

- Architect by the Polytechnic University of Madrid 1999 (ETSAM), with an average grade of "B", he has the program of Certified Passivhaus Designer 2017 by the Passivhaus Institut in Darmstadt (Germany) and Associate Professor at the School of Architecture of the University of Alcalá de Henares where he teaches the subject of "Environmental Rehabilitation and Energy Efficiency" within the Degree in Science and Technology of Building. He is currently a doctoral student at this school developing his thesis on "Passivhaus, Nearly Zero Energy Consumption Buildings and industrialized modular manufacturing"
- His professional activity is developed as Manager of DMDV Architects, specialists in Nearly Zero or Zero Energy Efficiency Buildings (nZEB) under the PASSIVHAUS standard, and she is also co-founder of CENERGETICA, a sustainability consultancy in international LEED, BREEAM and WELL certifications
- His professional experience includes the first building in Spain with PASSIVHAUS PLUS certification, which at the same time is the first zero consumption building in Madrid city. DMDV Architects are simultaneously developing multiple Passivhaus projects in both private and public residential areas

Professors

Mr. Flavio Celis D'Amico

- Doctor of Architecture, Polytechnic University of Madrid, 1996.. University Professor at the School of Architecture of the University of Alcalá, since 1999
- Teaching in undergraduate, master's and postgraduate degrees. Responsible for the subject of Environmental Criteria in Architectural Design of the Master's Degree in Advanced Architecture and City Projects (MUPAAC) of the UAH.. Invited researcher of the Government of Chile in the Project "Integrated design for the reconstruction of energy efficient housing", 2011-2013
- Guest lecturer in the Master's degree courses on Sustainable Habitat and Energy Efficiency at the Bio-Bio University (Chile)
- Editor of the magazine Habita Sustentable of the UBB (Chile)
- He is a specialist in architectural intervention, sustainable architecture, environment, and Heritage
- He has carried out several projects and works of bioclimatic architecture
- He has participated in several projects related to architectural heritage and sustainable architecture as a researcher at the University of Alcalá
- He has participated in patent programs for sustainable construction and has published more than 50 articles in journals and congresses (national and international), in relation to bioclimatic architecture and energy efficiency in building in Spain, Italy, France, Portugal, Greece, Czech Republic, Chile, Mexico, Brazil, China, India

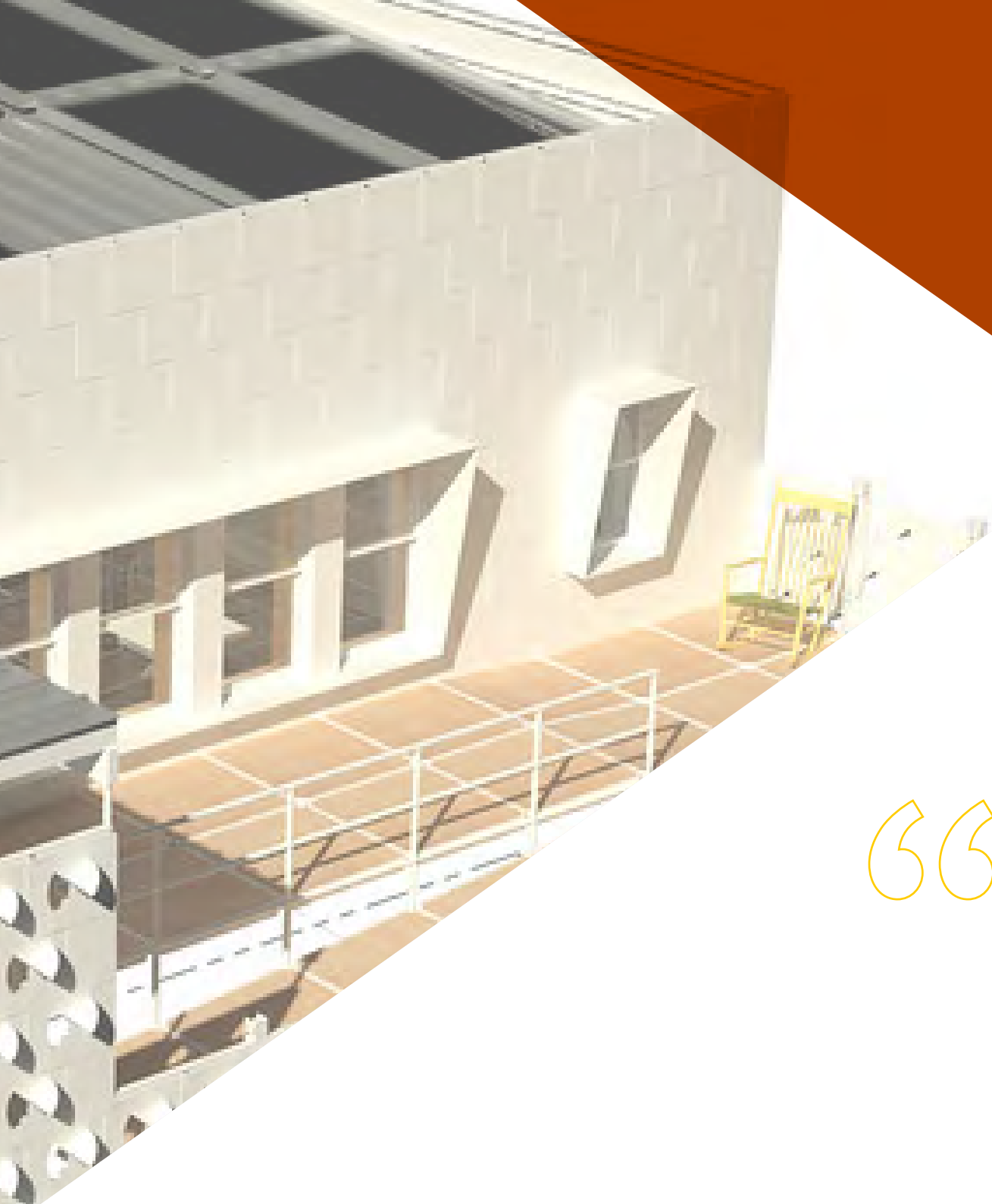
An impressive teaching staff, made up of professionals from different areas of expertise, will be your teachers during your training: a unique opportunity not to be missed"

03

Structure and Content

The contents of this program have been developed by the different experts participating in it, with a clear purpose: to ensure that our students acquire each and every one of the skills necessary to become true experts in this field.

A complete and well-structured program that will take you to the highest standards of quality and success.



A comprehensive teaching program, structured in well-developed teaching units, oriented towards learning that is compatible with your personal and professional life"

Module 1. Building Energy Simulation Tools and Regulations

1.1. Current Regulations: New Technical Code CTE 2019
- 1.1.1. Definition
- 1.1.2. Regulations
- 1.1.3. Existing buildings vs. newly constructed buildings
- 1.1.4. Competent Technicians for Energy Certification
- 1.1.5. Register of Energy Certificates

1.2. Differences Between CTE 2019 and CTE 2013
- 1.2.1. HE-0 Limitation of energy consumption
- 1.2.2. HE-1 Conditions for the control of energy demand
- 1.2.3. HE-3 Lighting installation conditions
- 1.2.4. HE-4 Minimum contribution of renewable energy to cover domestic hot water demand
- 1.2.5. HE-5 Minimum electric power generation

1.3. Unified energy certification tool lider-calener
- 1.3.1. HULC Tool
- 1.3.2. Installation.
- 1.3.3. Settings
- 1.3.4. Scope
- 1.3.5. Example of Certification with Unified Tool Lider-Calener

1.4. ce3x Energy Certification Program
- 1.4.1. CE3X Program
- 1.4.2. Installation.
- 1.4.3. Settings
- 1.4.4. Scope

1.5. ce3 Energy Certification Program
- 1.5.1. CE3 Program
- 1.5.2. Installation.
- 1.5.3. Settings
- 1.5.4. Scope

1.6. CERMA Energy Certification Program
- 1.6.1. CERMA Program
- 1.6.2. Installation.
- 1.6.3. Settings
- 1.6.4. Scope

1.7. Cypetherm 2020 Energy Certification Program
- 1.7.1. Cypetherm Program
- 1.7.2. Installation.
- 1.7.3. Settings
- 1.7.4. Scope

1.8. sg save Energy Certification Program
- 1.8.1. SG SAVE Program
- 1.8.2. Installation.
- 1.8.3. Settings
- 1.8.4. Scope

1.9. Practical Example of Energy Certification with Simplified c3x Procedure for an Existing Building
- 1.9.1. Building Location
- 1.9.2. Description of the Building Envelope
- 1.9.3. Description of the Systems
- 1.9.4. Energy Consumption Analysis

1.10. Practical Example of Energy Certification with the Lider - Calener Unified Tool for a New Construction Building
- 1.10.1. Building Location
- 1.10.2. Description of the Building Envelope
- 1.10.3. Description of the Systems
- 1.10.4. Energy Consumption Analysis

This training will allow you to advance in your career comfortably"

04

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

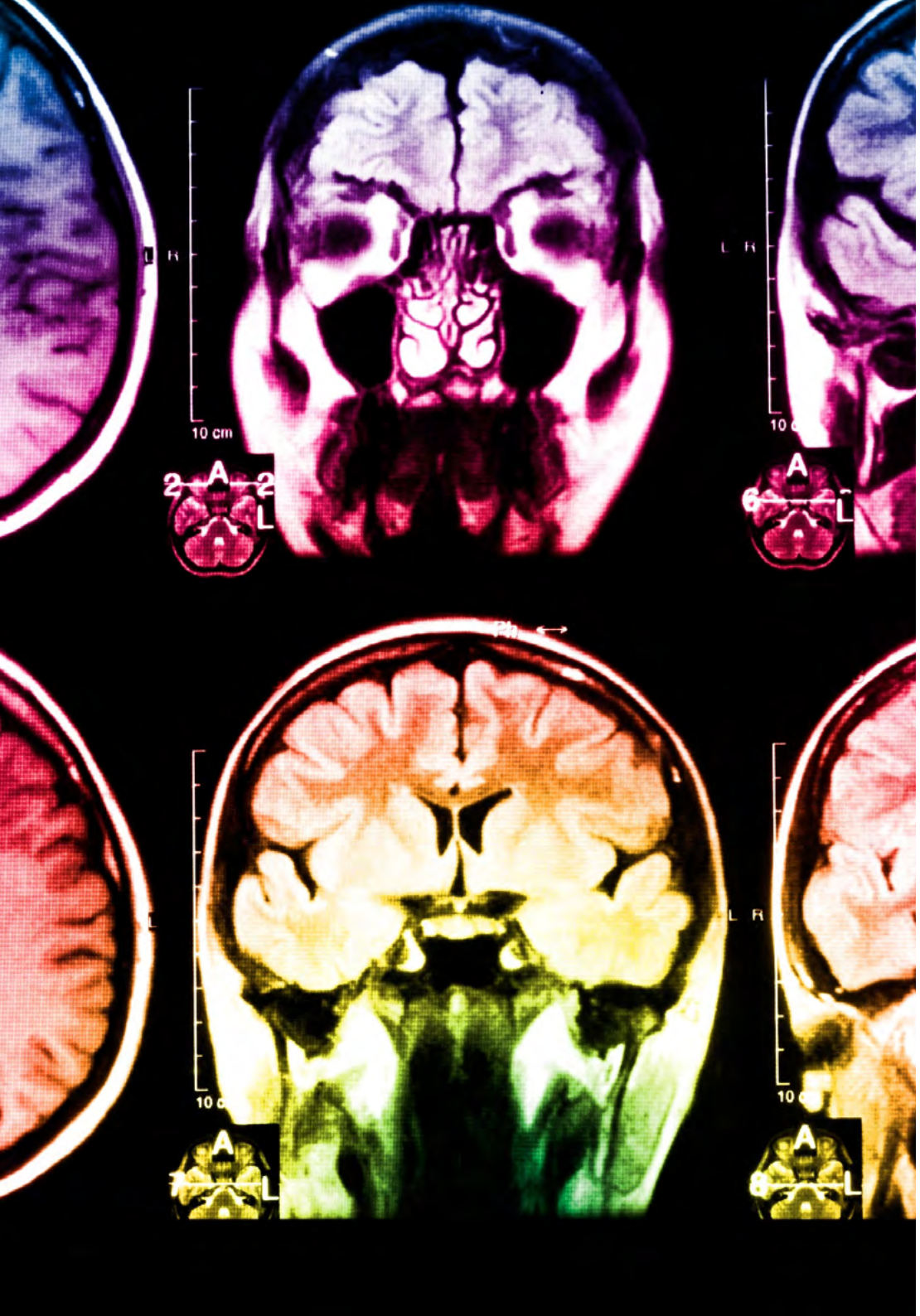
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

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.

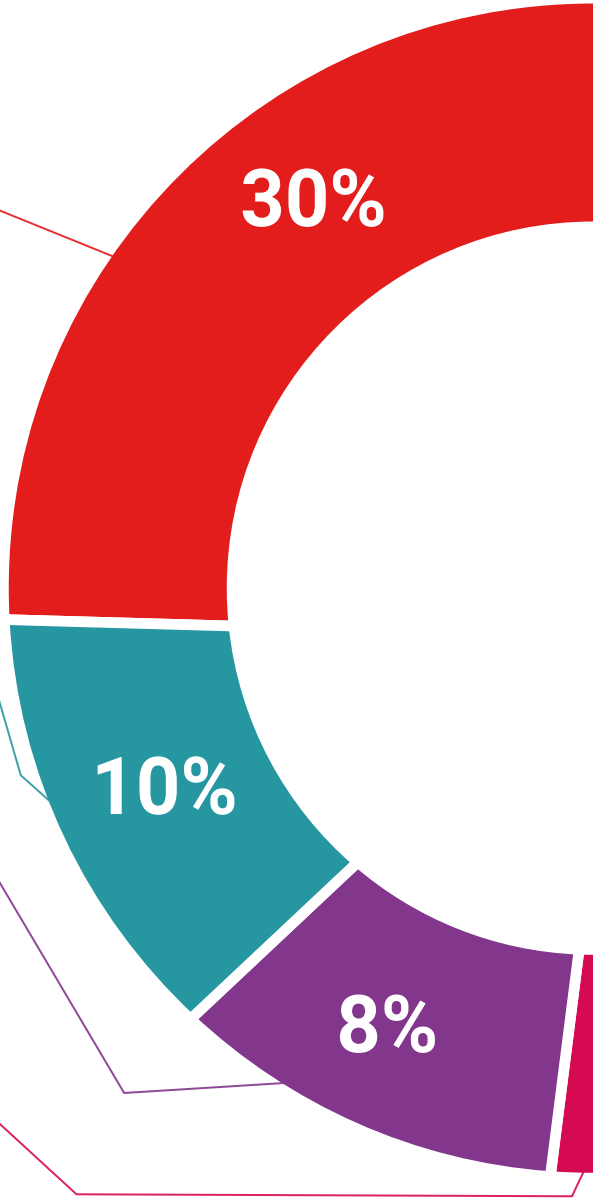
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

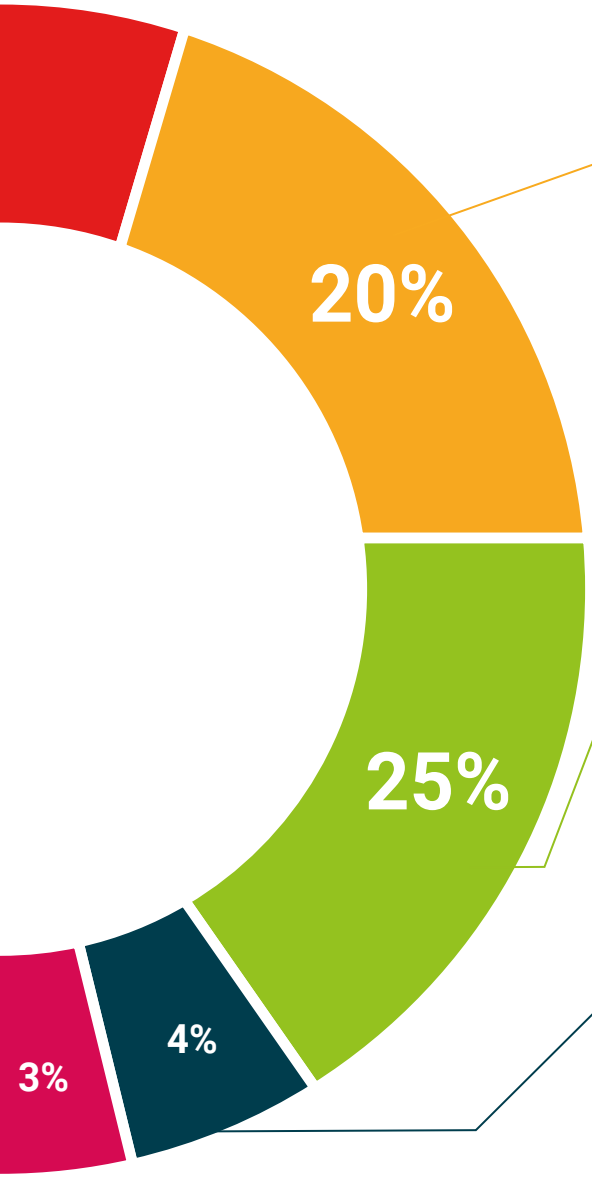
Practising Skills and Abilities

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.

05

Certificate

The Postgraduate Certificate in Building Energy Simulation Tools and Regulations guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.

Include in your education a Postgraduate Certificate program in Building Energy Simulation Tools and Regulations: a highly qualified added value for any professional in this area"

This **Postgraduate Certificate in Building Energy Simulation Tools and Regulations** contains the most complete and up-to-date program on the market..

Once the student has passed the evaluations, 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 Building Energy Simulation Tools and Regulations**

Official Number 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

Building Energy Simulation Tools and Regulations

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

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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