Postgraduate Diploma

Design, Service Life and Characterization of Cement-Based Materials

tech technological university

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Postgraduate Diploma
Design, Service Life and Characterization of Cement-Based Materials

- Modality: **online**
- Duration: **6 months**
- Certificate: **TECH Technological University**
- Schedule: **at your own pace**
- Exams: **online**

Website: **www.techtitute.com/in/engineering/postgraduate-diploma/postgraduate-diploma-design-service-life-characterization-cement-based-materials**

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01

Introduction

Concrete is the most widely used component in construction all over the world, which is why, over time, different types have been developed. However, today's demands call for the use of more sustainable and environmentally safe materials, so that the durability of new structures can be extended and existing structures can be strengthened. Thus, it is necessary to have professionals who are highly trained in identifying, developing and managing this type of materials. For this reason, the program makes available to students this and other topics of interest that will help boost their careers when managing any type of urban work.

This program will help you manage, develop and identify the various materials that have been created from concrete"

Concrete is fundamental in any type of construction, since it forms the basis for any structure to be built. Over the years, new types have been developed that, at present, do not meet the necessary conditions to be considered environmentally friendly. Thus, there is a great demand for professionals with scientific and technical knowledge to respond to the different construction problems.

In the Postgraduate Diploma in Design, Service Life and Characterization of Cement-Based Materials, the technological aspects of special concretes for different types of pouring will be covered. This allows the student to gain in-depth knowledge of the necessary tools to create materials that adapt to the needs and expectations of any architectural work.

It will also expand on the knowledge necessary to understand the fundamentals of metallic materials. All this, aimed at acquiring skills in the resolution of certain problems that may arise when deciding which materials to use in different engineering projects. We will also take a detailed look at the long-term behavior of reinforced concrete and the sustainability and safety criteria that exist.

At the end of the program, you will review the tools necessary to identify, select and make use of the most powerful and versatile characterization techniques available today. This will help determine the composition, topography, morphology and properties of materials and surfaces. For this reason, we have an excellent teaching staff that offers students their extensive experience in the design, service life and characterization of cement-based materials.

With a 100% online Postgraduate Diploma, students will be able to study comfortably, wherever and whenever they want. All you need is a device with internet access to take your career one step further. A modality according to the current times with all the guarantees to position the engineer in a highly demanded sector.

This **Postgraduate Diploma in Design, Service Life and Characterization of Cement-Based Materials** contains the most complete and up-to-date educational program on the market. The most important features of the program include:

- Gain in-depth knowledge of the variables, analysis and processing methods, as well as the characterization and properties of the materials used in construction
- Determine the life cycle and the carbon footprint of the materials
- Experiment with new materials and technology related to new applications and uses
- Manage new building technologies and participate in building quality management processes
- Evaluate aspects of sustainability and environmental impact of the materials
- Analyze the concept of durability of the construction materials and their relationship with the concept of sustainability
- Identify the main causes of the alteration of construction materials

Analyze the different concept of durability of construction materials and their relationship with the sustainability and quality of the work”

Perform an in-depth breakdown of the various techniques and equipment used to chemically, mineralogically and petrophysically characterize a building material"

Develop and manufacture special concretes according to their dosage specifications and technological properties.

Establish the most appropriate techniques for the study and durability of each material.

The program's teaching staff includes professionals from sector who contribute their work experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive training programmed to train in real situations.

The design of this Program focuses on Problem-Based Learning, by means of which the professional will have to try to solve the different situations of Professional Practice, which will be posed throughout the Program. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts.

02

Objectives

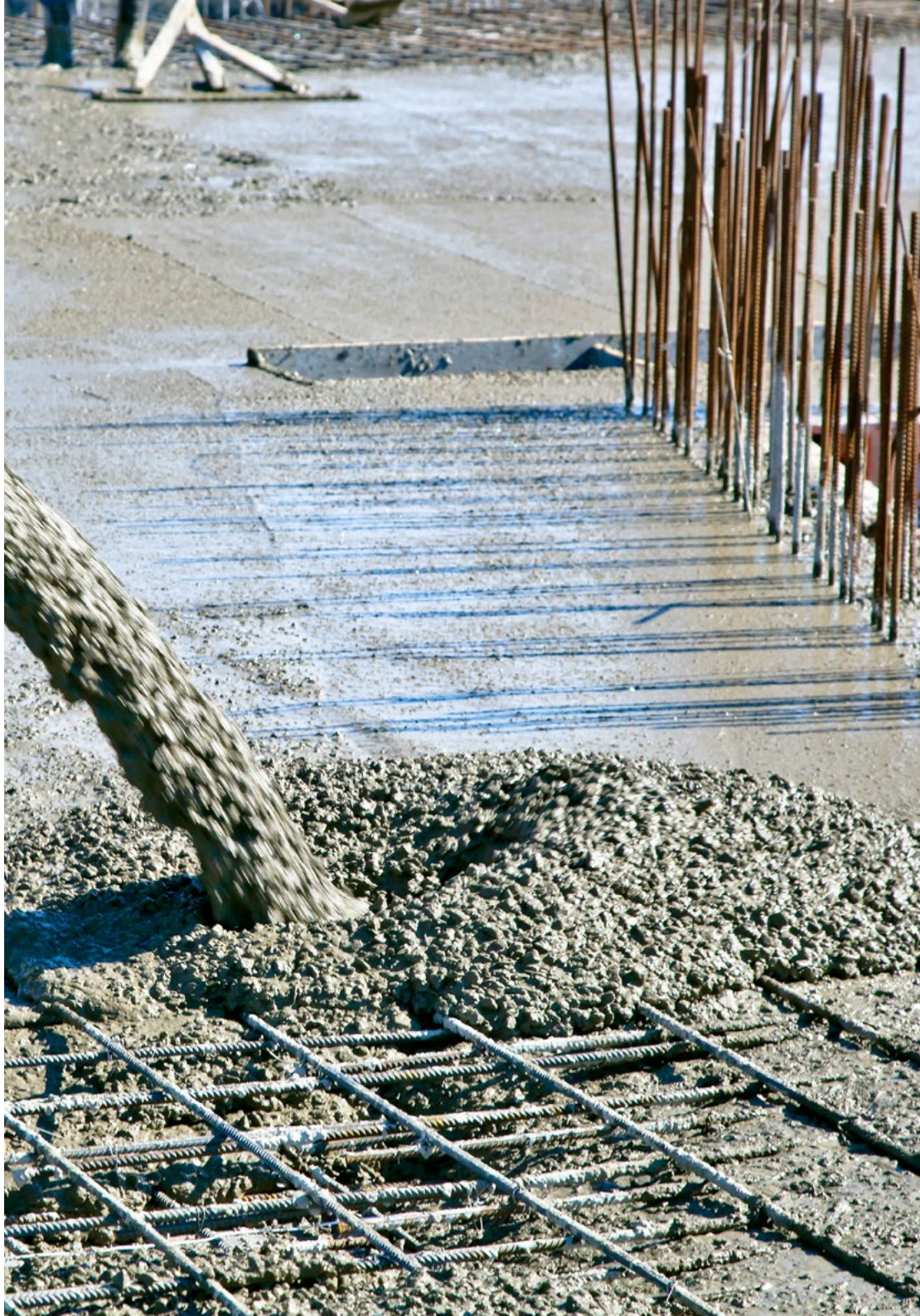
The program of this Postgraduate Diploma seeks to provide the necessary tools that the student needs to develop all the capabilities and skills in their field of work. Thus, it will address the key aspects to strengthen, experiment, innovate and adopt a scientific, creative and multidisciplinary attitude to manage cement-based materials, being able to face the multiple changes that have developed in recent years. In view of the above, TECH establishes the following general and specific objectives to guarantee the satisfaction of the future graduate.

Develop your skills in your work projects in order to manufacture special concretes that reinforce structures"

General Objectives

- Perform an exhaustive analysis of the different types of construction materials
- Gain in-depth knowledge of the features of different construction materials
- Implement new technologies applied to engineering materials
- Assess the waste materials
- Manage materials from a quality and production point of view
- Apply new techniques in making construction materials that are more environmentally friendly
- Raise awareness of new trends and materials applied to construction

Follow a problem-based learning methodology which will help to to prepare to face your professional challenges"



Specific Objectives

Module 1. Science and Technology of Inorganic Binders. Cement-Based Materials and Others

- Delve into the science of concrete: fresh and hardened state Characteristics in the fresh state, mechanical properties in the hardened state, stress-strain behavior, modulus of deformation and Poisson's ratio, creep, fracture. Dimensional stability, shrinkage
- Know in detail the nature, characteristics and performance of special concretes, which have been investigated in recent years
- Develop and manufacture special concretes according to their dosage specifications and technological properties
- Analyze the most important characteristics of special concretes, of the different existing typologies, whether with fibers, light, self-compacting, etc.
- Gain in-depth knowledge of the different techniques for producing blended mixtures
- Perform typical tests on construction materials, and be able to perform the required procedures

Module 2. Metallic Materials

- Study the different metallic materials and their typologies
- Analyze the bending performance of steel and its regulations
- Know in detail the most important properties and behavior of steel as a construction material

Module 3. Durability, Protection and Service Life of Materials

- Analyze the concept of durability of the construction materials and their relationship with the concept of sustainability
- Identify the main causes of the alteration of construction materials
- Analyze the interaction of materials with the environment in which they are immersed and its influence on their durability
- Identify the main incompatibilities between construction materials
- Establish the most appropriate characterization techniques for the study of the durability of each material
- Master different options to ensure the durability of structures
- Present mathematical models for the estimation of service life of materials

Module 4. Microstructural Characterization of Materials

- Give an in-depth breakdown of the various techniques and equipment used to chemically, mineralogically and petrophysically characterize a construction material
- Establish the basis for advanced materials characterization techniques, specifically optical microscopy, scanning electron microscopy, transmission electron microscopy, x-ray diffraction, x-ray fluorescence, etc.
- Master the evaluation and interpretation of data obtained with scientific techniques and procedures

03

Course Management

In our commitment to offer elite education for all, TECH works with renowned professionals so that the student acquires solid knowledge in the speciality of Design, Service Life and Quality Control of Cement-Based Materials. For this reason, this Postgraduate Diploma has a highly qualified team with extensive experience in the sector, who will offer students the best possible resources in the development of their skills during the course. In this way, students have the guarantees they need to specialize at an international level in a booming sector that will catapult them to professional success.

Develop your skills and specialize in a highly-demanded professional sector on an international level"

Management

Dr. Miñano Belmonte, Isabel de la Paz

- Contracted Doctor for the Advanced Construction Science and Technology Group of the Polytechnic University of Cartagena.
- Technical Architect from the Polytechnic University of Cartagena
- Construction Engineer from the Camilo José Cela University.
- PhD from the Polytechnic University of Cartagena
- Master's Degree in Construction (Major in Technology) from the Polytechnic University of Valencia.
- Speaker at various national and international conferences and congresses.
- Author of the books *"Manual de cálculo de hormigón armado. Teoría y ejemplos prácticos"* (Reinforced concrete calculation manual. Theory and practical examples) and *"Problemas resueltos de hormigón armado (HA)"* (Solved problems of reinforced concrete), as well as author of specific chapters in other books.
- Co-author of various scientific high-impact publications on construction materials

Dr. Benito Saorin, Francisco Javier

- Technical Architect in Optional Direction and Coordination Functions Of SS
- Municipal Technician in the Ricote-Murcia Town Hall
- Work experience in an Architecture Office
- Construction Engineer
- Construction Engineer from the Camilo José Cela University.
- PhD from the Polytechnic University of Valencia
- Master's Degree in Construction (Major in Technology) from the Polytechnic University of Valencia.
- Vast experience in R&D&I with more than 10 years experience on site
- Reviewer of journals indexed in JCR
- Articles in international congresses and high-impact indexed journals on the different areas of construction materials

Dr. Rodríguez López, Carlos Luis

- Head of the Materials Department at the Construction Technology Center of the Region of Murcia.
- Coordinator of the sustainable construction and climate change area in CTCON
- Technician in the projects department of PM Arquitectura y Gestión SL
- PhD in Construction Engineering in Construction Materials and Sustainable Construction
- Construction Engineer from Polytechnic University of Cartagena
- PhD from the University of Alicante
- Master's Degree in Engineering of Materials, Water and Land: Sustainable Construction from the University of Alicante
- Extensive experience in R&D&I
- Articles in international congresses and high-impact indexed journals on the different areas of construction materials
- Specialist in the development of new materials, products for construction and in the analysis of pathologies in construction

Professors

Mr. del Pozo Martín, Jorge

- Technical and economic evaluator and project auditor at the Spanish Ministry of Science and Innovation
- Civil Engineer
- Diploma in Business Administration from UNED In his professional work experience, he worked in the private sector in Arthur Andersen, Pacadar, Dragados and Bovis Lend Lease
- Master's Degree in Research in Civil Engineering from the University of Cantabria

Dr. Muñoz Sánchez, María Belén

- Consultant in Innovation and Sustainability of Construction Materials
- Reseracher in polymers at POLYMAT
- Dr. Engineer of Sustainable Processes and Materials from the University of the Basque Country
- Chemical Engineer from the University of Extremadura
- Master's Degree in Research, with a major in Chemistry from the University of Extremadura.
- Extensive experience in R&D&I in materials, including waste valorization to create innovative construction materials.
- Co-author of scientific article published in international journals
- Speaker at international congresses related to renewable energies and the environmental sector.

04

Structure and Content

The content has been designed to comply with the essential requirements in the field of Design, Service Life and Characterization of Cement-Based Materials. In addition, thanks to the proposals of the teaching team, it has the necessary structure to offer a broad perspective in this field. All this to delve into the science of concrete, from its condition to the characteristics and properties that compose it. From module 1, students will see their knowledge broadened, which will enable them to develop professionally, knowing that they can count on the support of a team of experts.

Perform typical tests on construction materials, and be able to perform the procedures that are required in any type of infrastructure project"

Module 1. Science and Technology of Cement-Based Materials

1.1. Cement
- 1.1.1. Cement and Hydration Reactions: Cement Composition and Manufacturing Process. Majority Compounds, Minority Compounds
- 1.1.2. Process of Hydration. Characteristics of Hydrated Products. Alternative Materials to Cement
- 1.1.3. Innovation and New Products

1.2. Mortar
- 1.2.1. Properties
- 1.2.2. Manufacturing, Types and Uses
- 1.2.3. New Materials

1.3. High Resistance Concrete
- 1.3.1. Composition
- 1.3.2. Properties and Characteristics
- 1.3.3. New Designs

1.4. Self-Compacting Concrete
- 1.4.1. Nature and Characteristics of its Components
- 1.4.2. Dosage, Manufacturing, Transport and Commissioning
- 1.4.3. Characteristics of the Concrete

1.5. Light Concrete
- 1.5.1. Composition
- 1.5.2. Properties and Characteristics
- 1.5.3. New Designs

1.6. Fiber and Multifunctional Concretes
- 1.6.1. Materials Used in the Manufacturing
- 1.6.2. Properties
- 1.6.3. Designs

1.7. Self-Repairing and Self-Cleaning Concretes
- 1.7.1. Composition
- 1.7.2. Properties and Characteristics
- 1.7.3. New Designs

1.8. Other Cement-Based Materials (Fluid, Antibacterial, Biological, etc.)
- 1.8.1. Composition
- 1.8.2. Properties and Characteristics
- 1.8.3. New Designs

1.9. Destructive and Non-Destructive Characteristics Trials
- 1.9.1. Characterization of Materials
- 1.9.2. Destructive Techniques. Fresh and Hardened State
- 1.9.3. Non-Destructive Techniques and Procedures Applied to Materials and Construction Structures

1.10. Additive Mixtures
- 1.10.1. Additive Mixtures
- 1.10.2. Advantages and Disadvantages
- 1.10.3. Sustainability

Module 2. Metallic Materials

2.1. Metallic Materials: Types and Alloys
- 2.1.1. Metals
- 2.1.2. Ferrous Alloys
- 2.1.3. Non-Ferrous Alloys

2.2. Ferrous Metal Alloys
- 2.2.1. Fabrication
- 2.2.2. Treatment
- 2.2.3. Conformation and Types

2.3. Ferrous Metal Alloys. Steel and Castings
- 2.3.1. Corten Steel
- 2.3.2. Stainless Steel
- 2.3.3. Carbon Steel
- 2.3.4. Castings

2.4. Ferrous Metal Alloys. Products of Steel
- 2.4.1. Hot Rolled Products
- 2.4.2. Foreign Profiles
- 2.4.3. Cold-Formed Profiles
- 2.4.4. Other Products Used in Metallic Construction

2.5. Ferrous Metallic Alloys Mechanical Characteristics of Steel
- 2.5.1. Stress-Strain Diagram
- 2.5.2. Simplified E-Diagrams
- 2.5.3. Loading and Unloading Process

2.6. Welded Joints
- 2.6.1. Cutting Methods
- 2.6.2. Types of Welded Joints
- 2.6.3. Electric Arc Welding
- 2.6.4. Fillet Welded Seams

2.7. Non-Ferrous Metal Alloys. Aluminium and its Alloys
- 2.7.1. Properties of Aluminium and its Alloys
- 2.7.2. Thermal Treatments and Hardening Mechanisms
- 2.7.3. Designation and Standardization of Aluminum Alloys
- 2.7.4. Aluminium Alloys for Forging and Casting

2.8. Non-Ferrous Metal Alloys. Copper and its Alloys
- 2.8.1. Pure Copper
- 2.8.2. Classification, Properties and Applications
- 2.8.3. Brasses, Bronzes, Cupro-Aluminums, Cupro-Silicides and Cupro-Nickels
- 2.8.4. Alpaca Silver

2.9. Non-Ferrous Metal Alloys. Titanium and its Alloys
- 2.9.1. Characteristics and Properties of Commercially Pure Titanium
- 2.9.2. Most Commonly Used Titanium Alloys
- 2.9.3. Thermal Treatments of Titanium and its Alloys

2.10. Non-Ferrous Metal Alloys, Light Alloys and Superalloys
- 2.10.1. Magnesium and its Alloys. Superalloys
- 2.10.2. Properties and Applications
- 2.10.3. Nickel-, Cobalt- and Iron-Based Superalloys

Module 3. Durability, Protection and Service Life of Materials

3.1. Durability of Reinforced Concrete
- 3.1.1. Types of Damage
- 3.1.2. Factors
- 3.1.3. Most Common Damage

3.2. Durability of Cement-Based Materials I. Concrete Degradation Processes
- 3.2.1. Cold Weather
- 3.2.2. Sea Water
- 3.2.3. Sulphate Attack

3.3. Durability of Cement-Based Materials II. Concrete Degradation Processes
- 3.3.1. Alkali–Silica Reaction
- 3.3.2. Acid Attacks and Aggressive Ions
- 3.3.3. Hard Waters

3.4. Corrosion of Reinforcement I
- 3.4.1. Process of Corrosion in Metals
- 3.4.2. Forms of Corrosion
- 3.4.3. Passivity
- 3.4.4. Importance of the Problem
- 3.4.5. Behavior of Steel in Concrete
- 3.4.6. Corrosion Effects of Steel Embedded in Concrete

3.5. Corrosion of Reinforcement II
- 3.5.1. Carbonation Corrosion of Concrete
- 3.5.2. Corrosion by Penetration of Chlorides
- 3.5.3. Stress Corrosion
- 3.5.4. Factors Affecting the Speed of Corrosion

3.6. Models of Service Life
- 3.6.1. Service Life
- 3.6.2. Carbonation
- 3.6.3. Chlorides

3.7. Durability in the Regulations
- 3.7.1. EHE-08
- 3.7.2. Europe
- 3.7.3. Structural Code

3.8. Estimation of Service Life in New Projects and Existing Structures
- 3.8.1. New Project
- 3.8.2. Residual Service Life
- 3.8.3. Applications

3.9. Design and Execution of Durable Structures
- 3.9.1. Material Selection
- 3.9.2. Dosage Criteria
- 3.9.3. Protection of Reinforcement Against Corrosion

3.10. Tests, Quality Controls on Site and Reparation
- 3.10.1. Control Tests on Site
- 3.10.2. Execution Control
- 3.10.3. Tests on Structures with Corrosion
- 3.10.4. Fundamentals for Reparation

Module 4. Microstructural Characterization of Materials

4.1. Optical Microscope
- 4.1.1. Advanced Optic Microscope Techniques
- 4.1.2. Principles of the Technique
- 4.1.3. Topography and Application

4.2. Transmission Electron Microscopy (TEM)
- 4.2.1. TEM Structure
- 4.2.2. Electron Diffraction
- 4.2.3. TEM Images

4.3. Scanning Electron Microscope (SEM)
- 4.3.1. SEM Characteristics
- 4.3.2. Microanalysis of X Rays
- 4.3.3. Advantages and Disadvantages

4.4. Scanning Transmission Electron Microscopy (STEM)
- 4.4.1. STEM
- 4.4.2. Images and Tomography
- 4.4.3. EELS

4.5. Atomic Force Microscopy (AFM)
- 4.5.1. AFM
- 4.5.2. Topographic Modes
- 4.5.3. Electric and Magnetic Characterization of Samples

4.6. Mercury Intrusion Porosimetry Hg
- 4.6.1. Porosity and Porous System
- 4.6.2. Equipment and Properties
- 4.6.3. Analysis

4.7. Nitrogen Porosimetry
- 4.7.1. Description of the Equipment
- 4.7.2. Properties
- 4.7.3. Analysis

4.8. X Ray Diffraction (XRD)
- 4.8.1. Generation and Characteristics of XRD
- 4.8.2. Sample Preparation
- 4.8.3. Analysis

4.9. Electrical Impedance Spectroscopy (EIE)
- 4.9.1. Method
- 4.9.2. Procedure
- 4.9.3. Advantages and Disadvantages

4.10. Other Interesting Techniques
- 4.10.1. Thermogravimetry
- 4.10.2. Fluorescence
- 4.10.3. Absorption Isothermal Desorption of H_2O Vapor

Master the evaluation and interpretation of data obtained with scientific techniques and procedures, following a program endorsed by an expert team”

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"

At TECH we use the Case Method

Our program offers a revolutionary method of skills and knowledge development. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

At TECH, you will experience a way of learning that is shaking the foundations of traditional universities around the world"

We are the first online university to combine Harvard Business School case studies with a 100% online learning system based on repetition.

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

A learning method that is different and innovative

This intensive Engineering program at TECH Technological University prepares you to face all the challenges in this field, both nationally and internationally. We are committed to promoting your personal and professional growth, the best way to strive for success, that is why at TECH Technological University you will use Harvard *case studies*, with which we have a strategic agreement that allows us, to offer you material from the best university in the world.

> *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 by 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

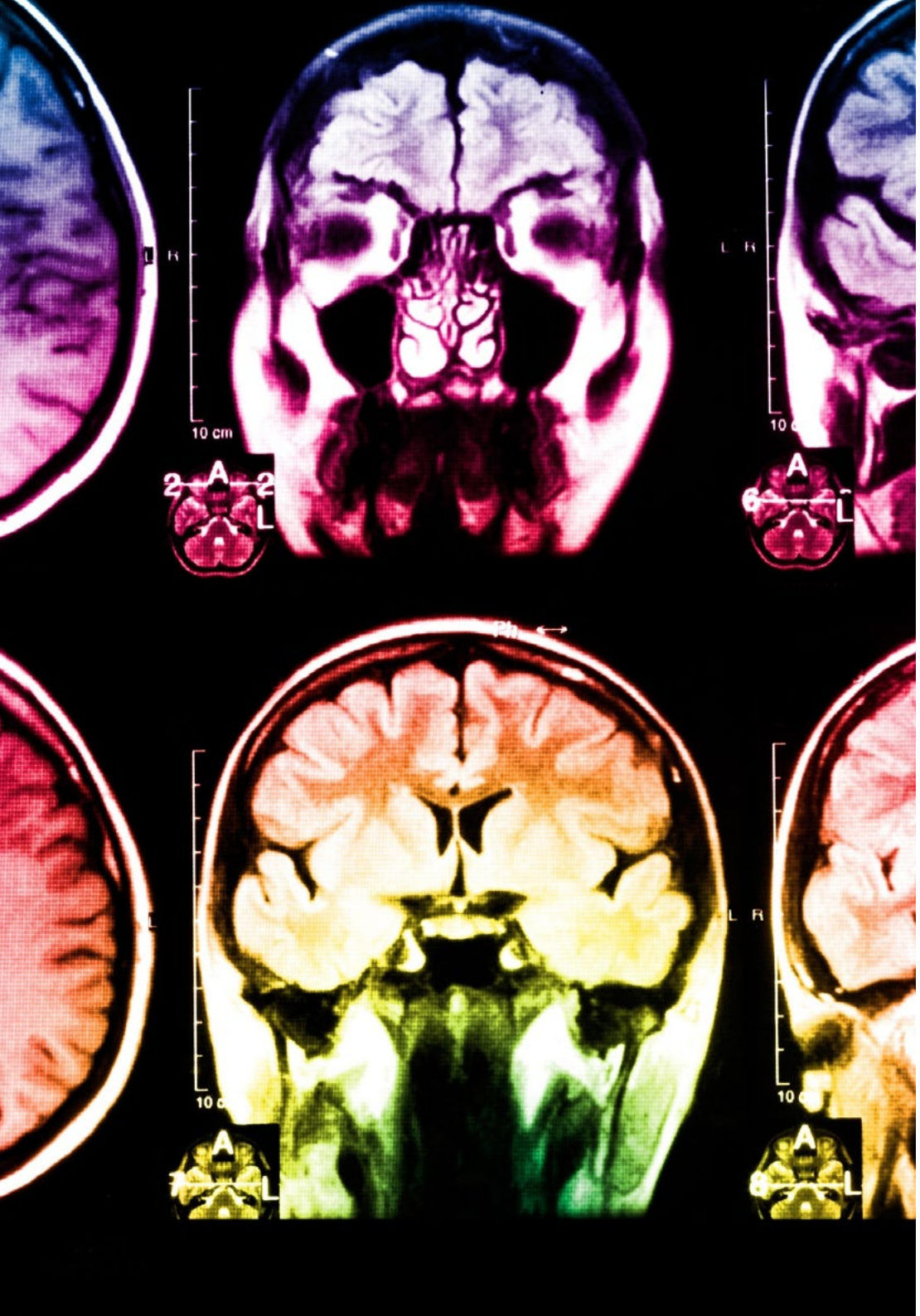
TECH is the first university in the world to combine Harvard University *case studies*with a 100% online learning system based on repetition, which combines 8 different didactic elements in each lesson.

We enhance Harvard *case studies* 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 university 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

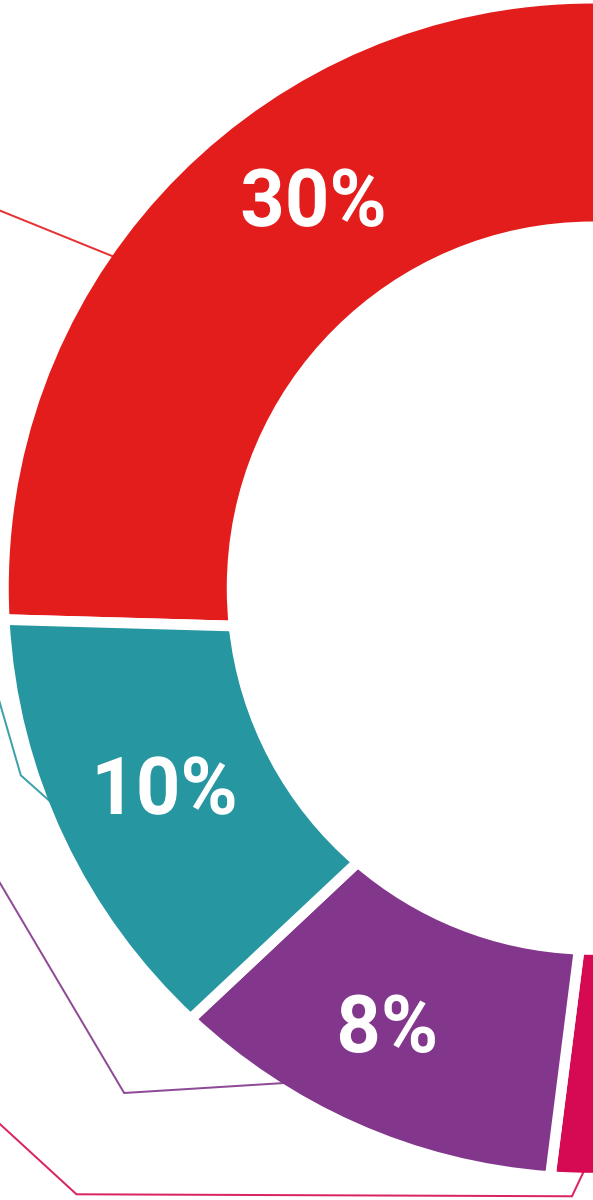
There is scientific evidence suggesting that observing third-party experts can be useful. Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

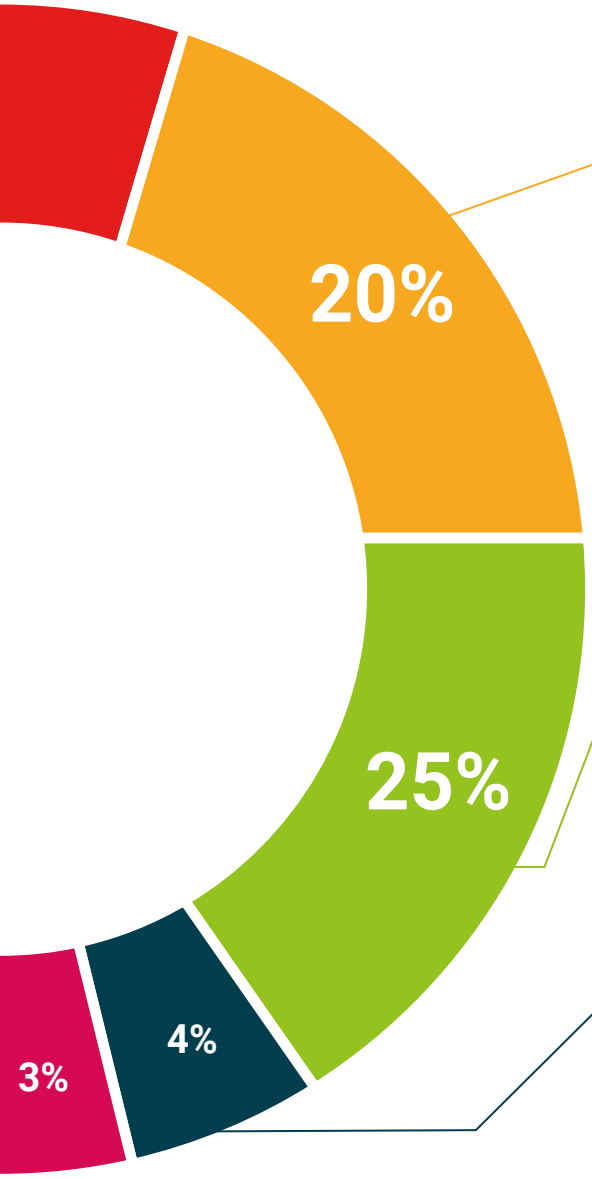
Practising Skills and Abilities

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

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

They will complete a selection of the best case studies in the field used at Harvard. Cases that are presented, analyzed, and supervised by the best senior management 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 multimedia content presentation training Exclusive system 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 your goals.

06

Certificate

The Postgraduate Diploma in Design, Service Life and Characterization of Cement-Based Materials, guarantees, in addition to the most rigorous and up-to-date training, access to a Postgraduate Diploma issued by TECH Technological University.

Successfully complete this program and receive your university degree without travel or cumbersome paperwork”

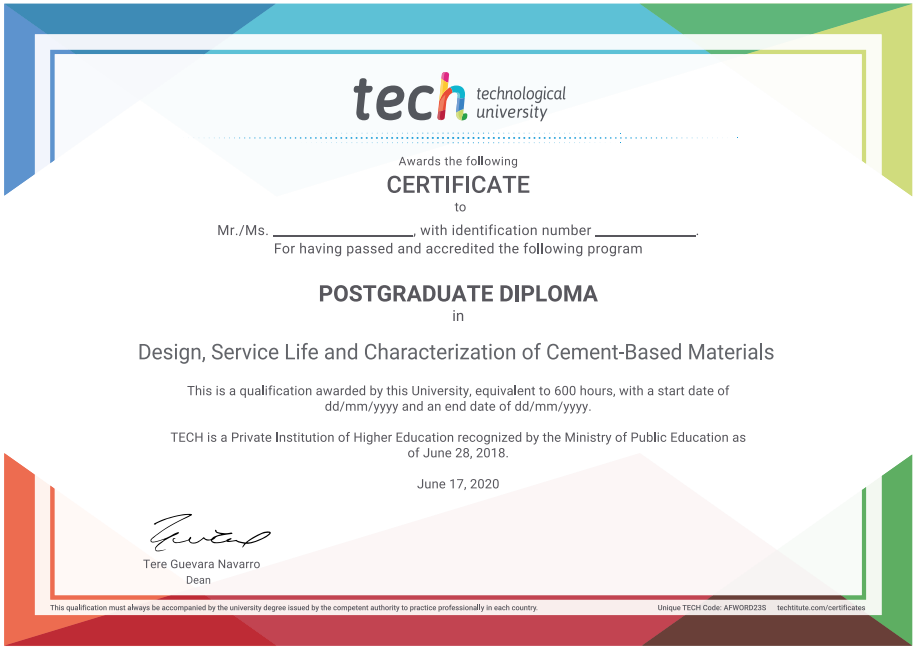
This **Postgraduate Diploma in Design, Service Life and Characterization of Cement-Based Materials** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Diploma** issued by **TECH Technological University** via tracked delivery*.

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

Title: **Postgraduate Diploma in Design, Service Life and Characterization of Cement-Based Materials**

Official Nº of Hours: **600 h.**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Awards the following

CERTIFICATE

to

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

For having passed and accredited the following program

POSTGRADUATE DIPLOMA

in

Design, Service Life and Characterization of Cement-Based Materials

This is a qualification awarded by this University, equivalent to 600 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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Postgraduate Diploma

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